

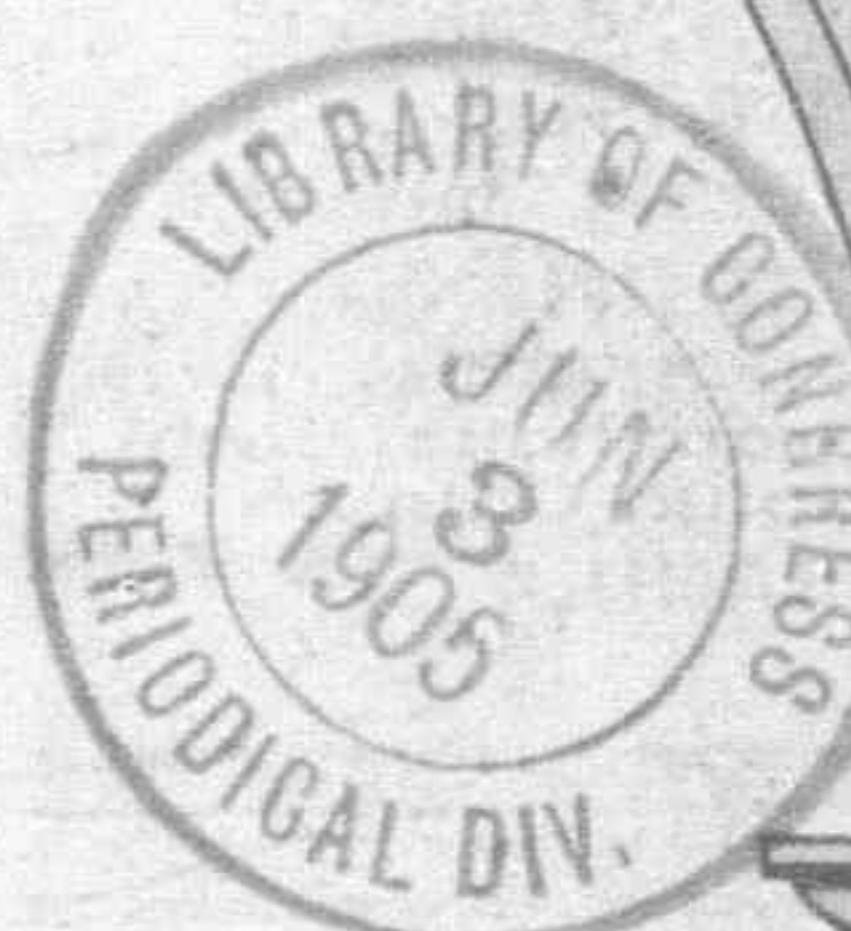
BOMBAY PORT TRUST IMPROVEMENTS

VOL. 1

MANILA, P. I., APRIL, 1905

No. 11

THE FAR-EASTERN REVIEW

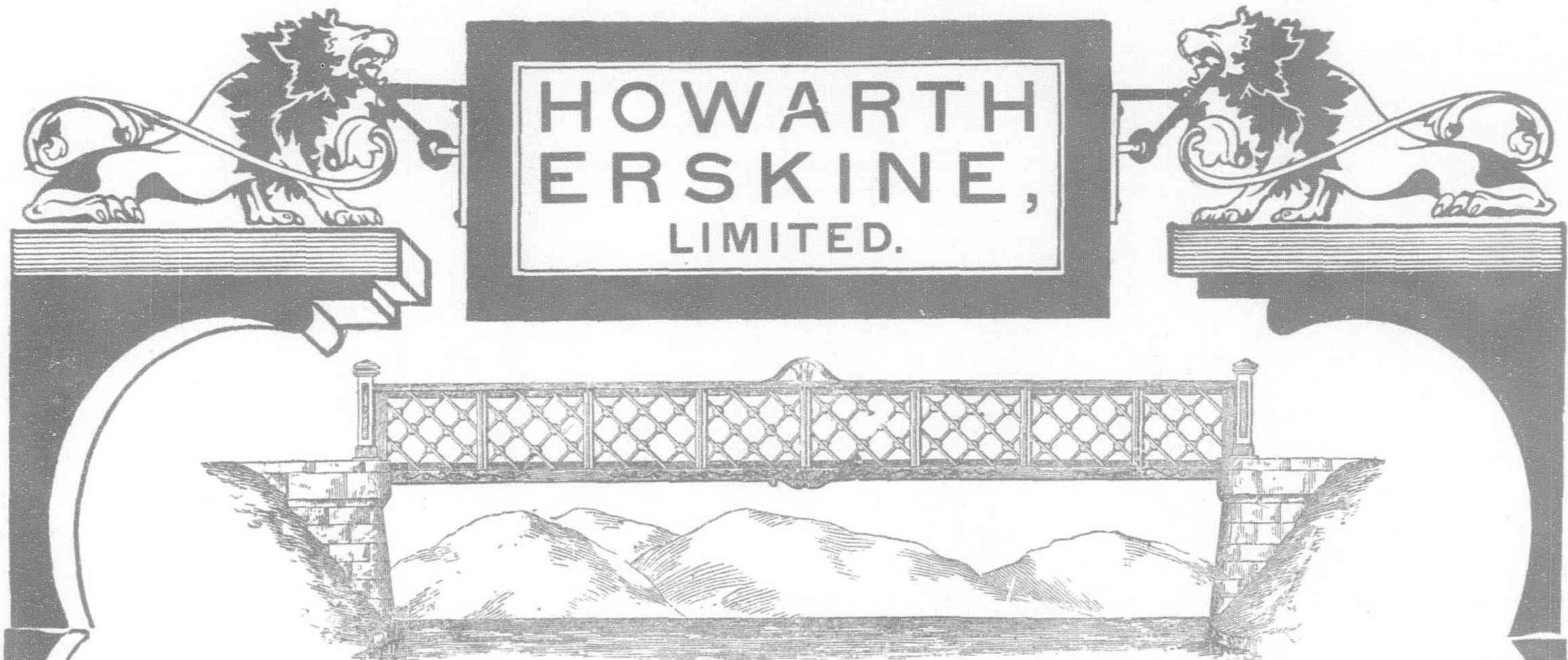


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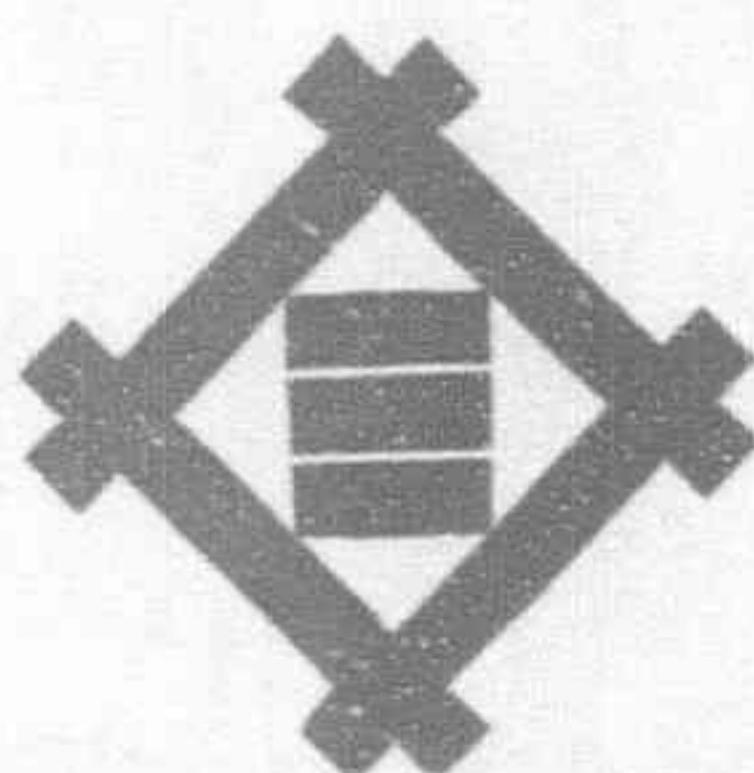
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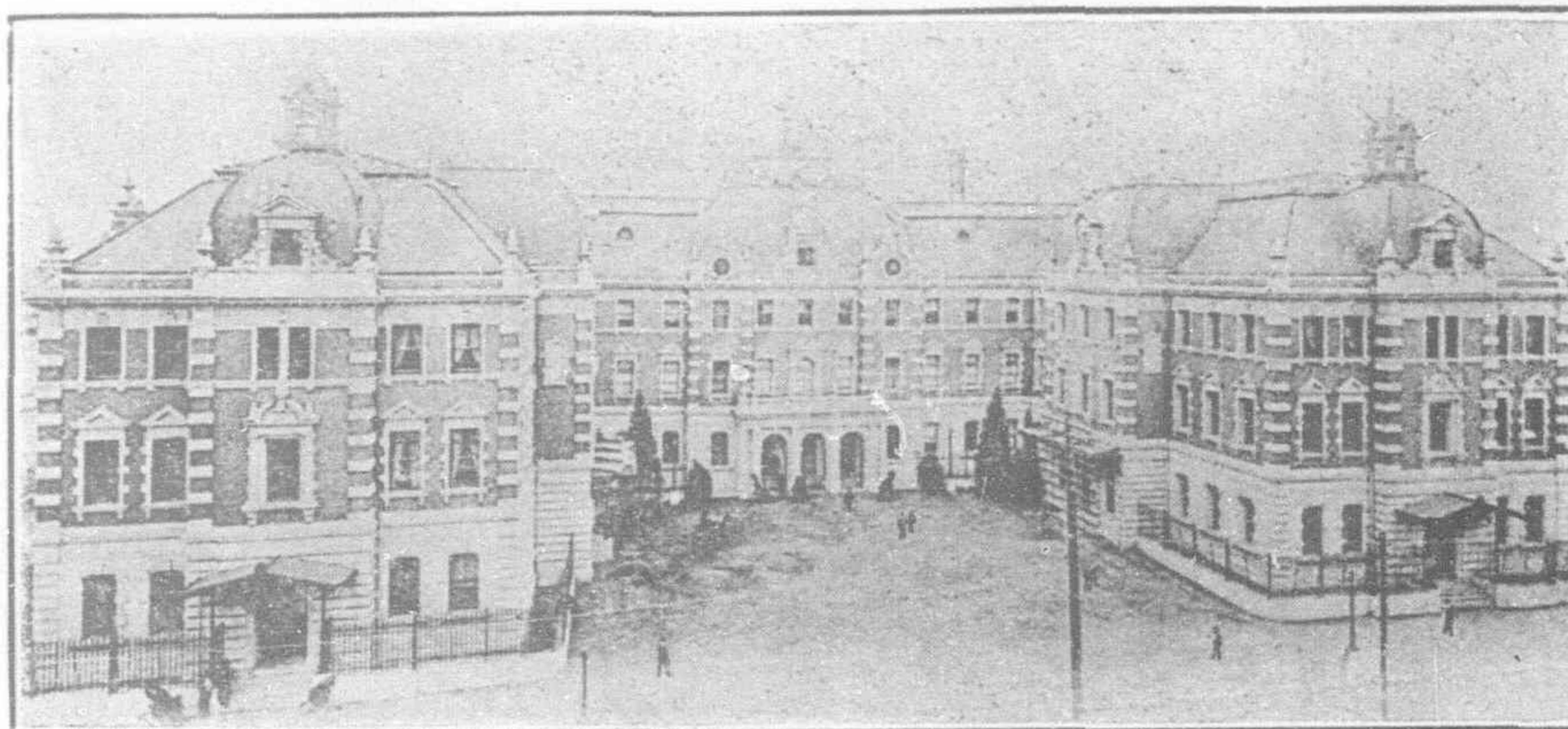
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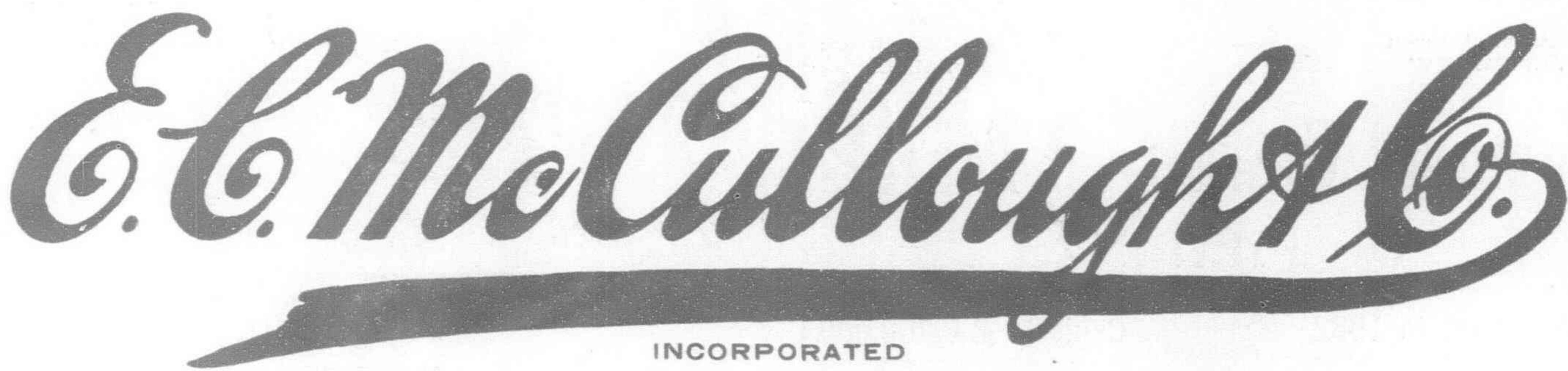
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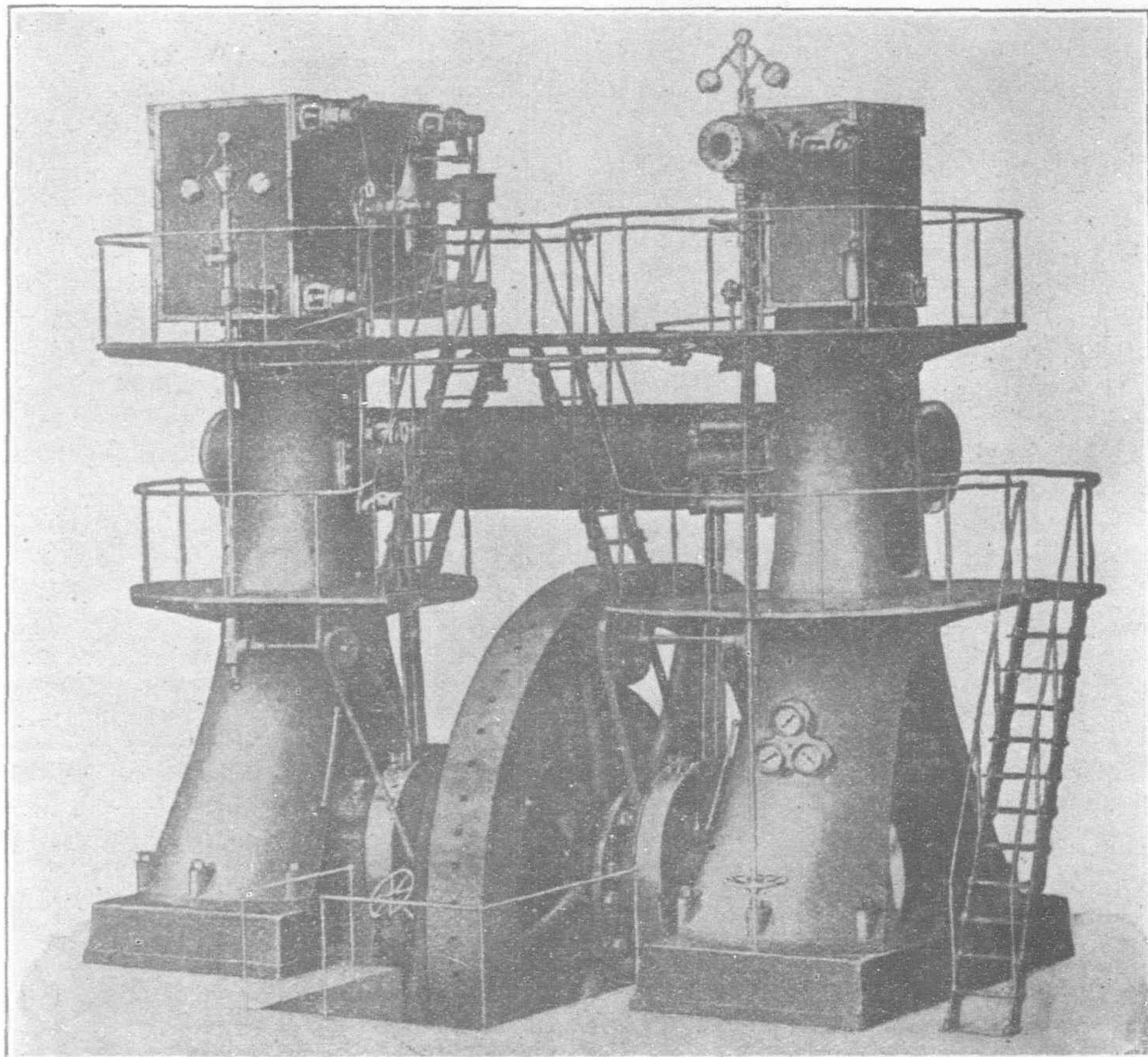
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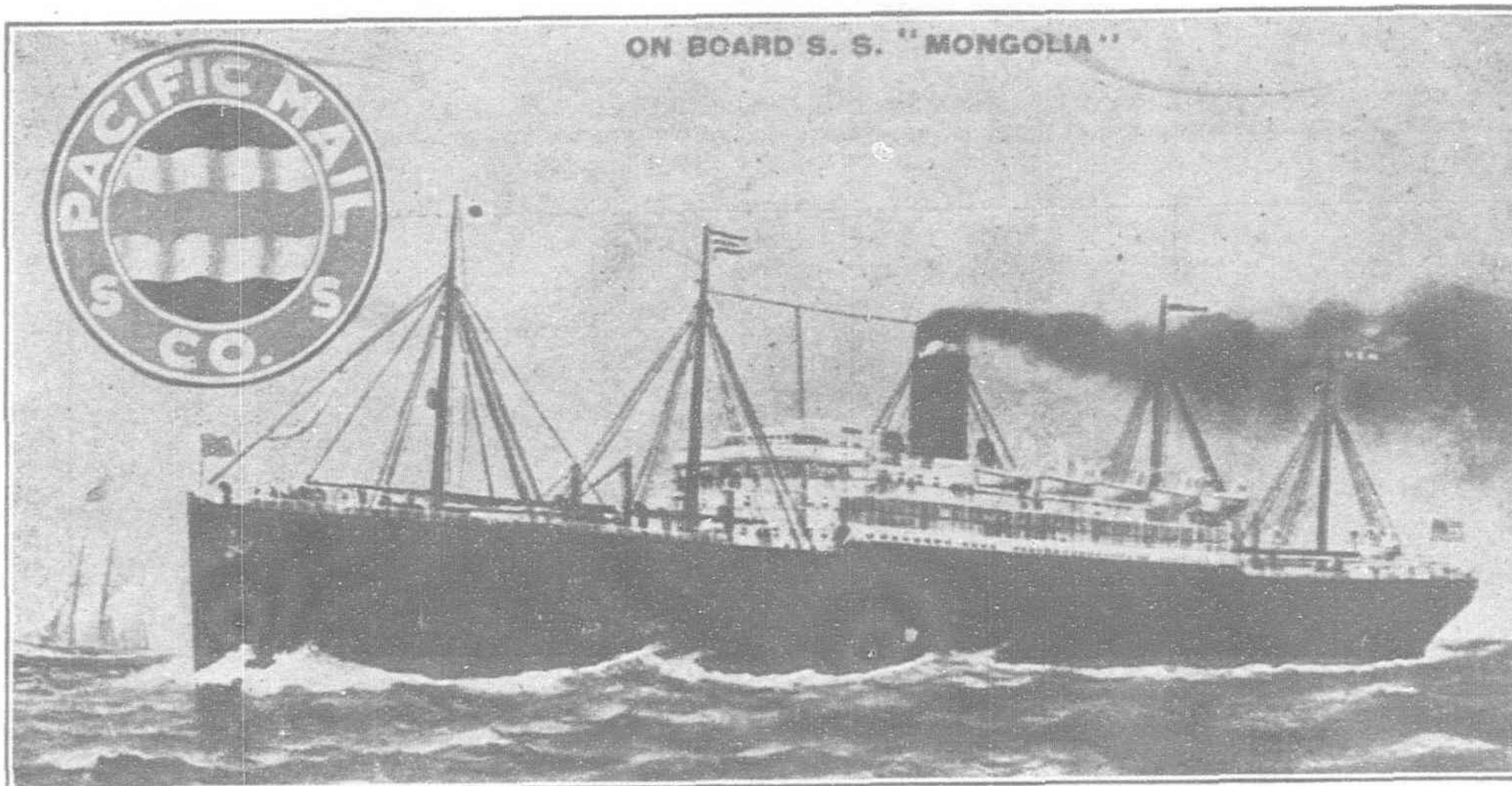
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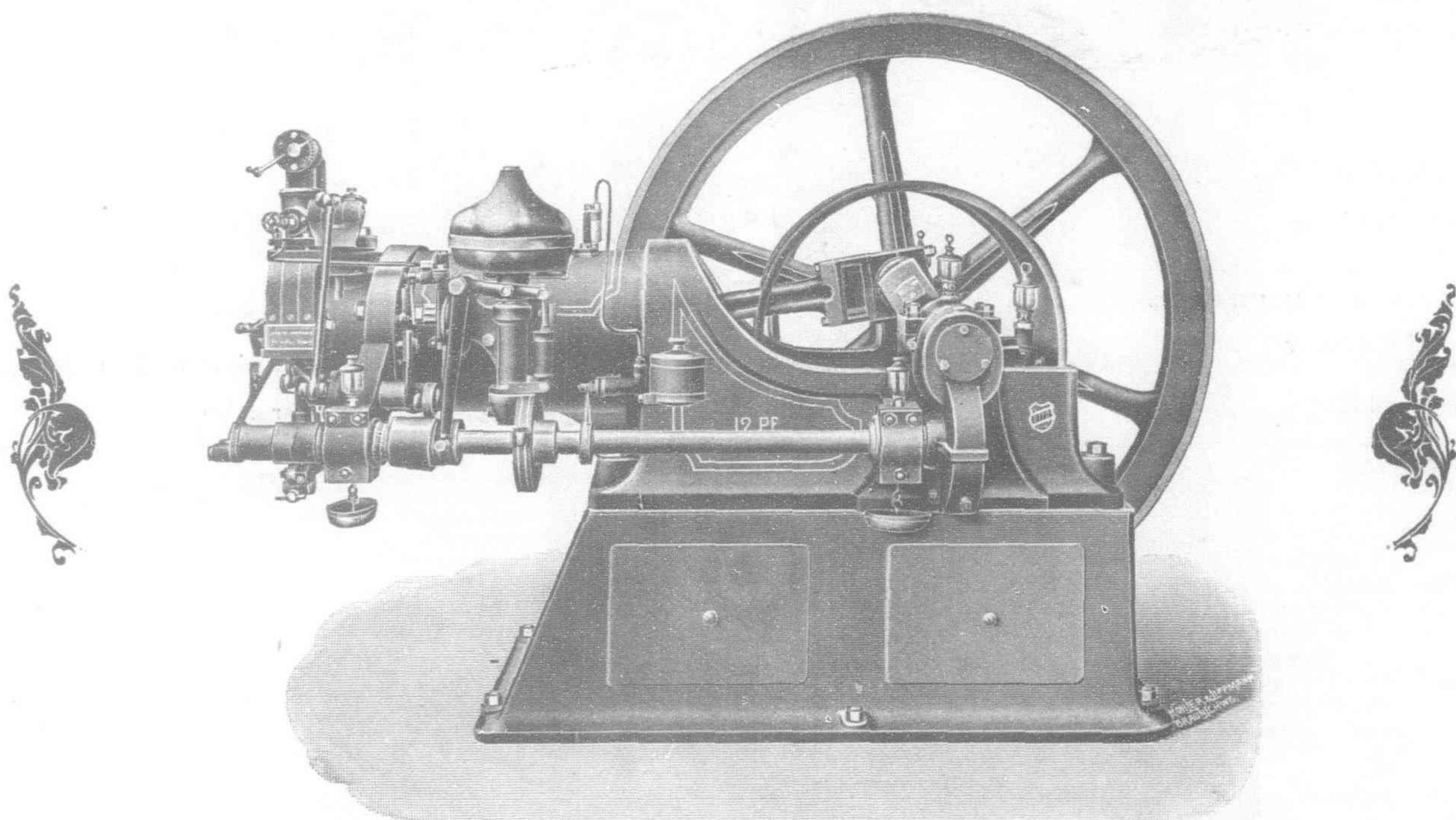
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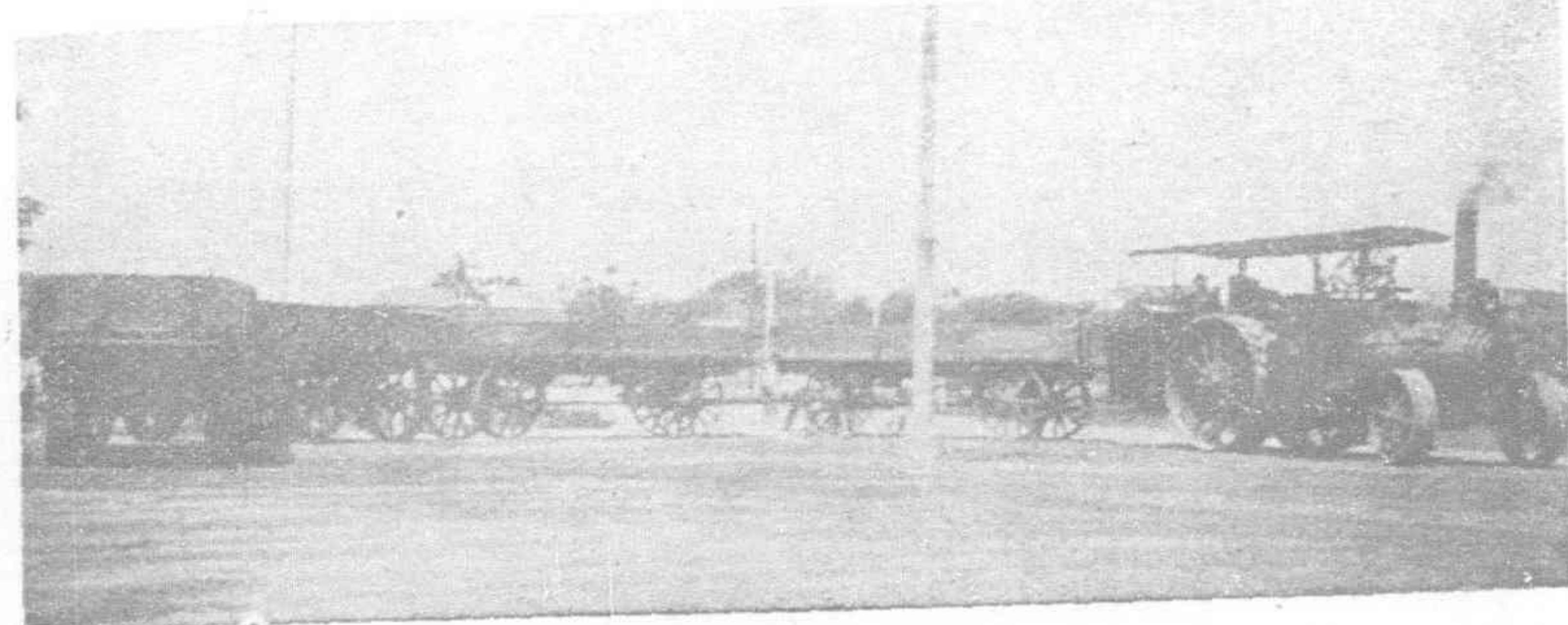
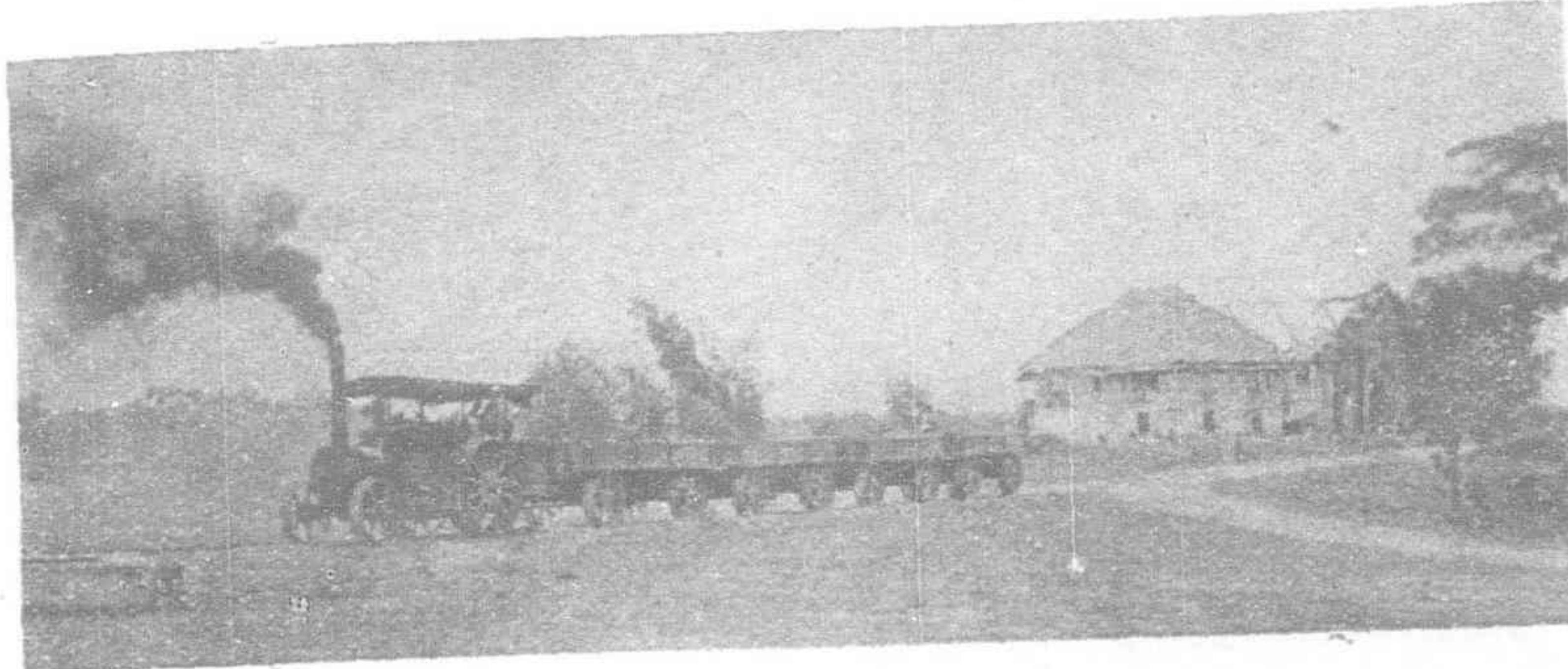
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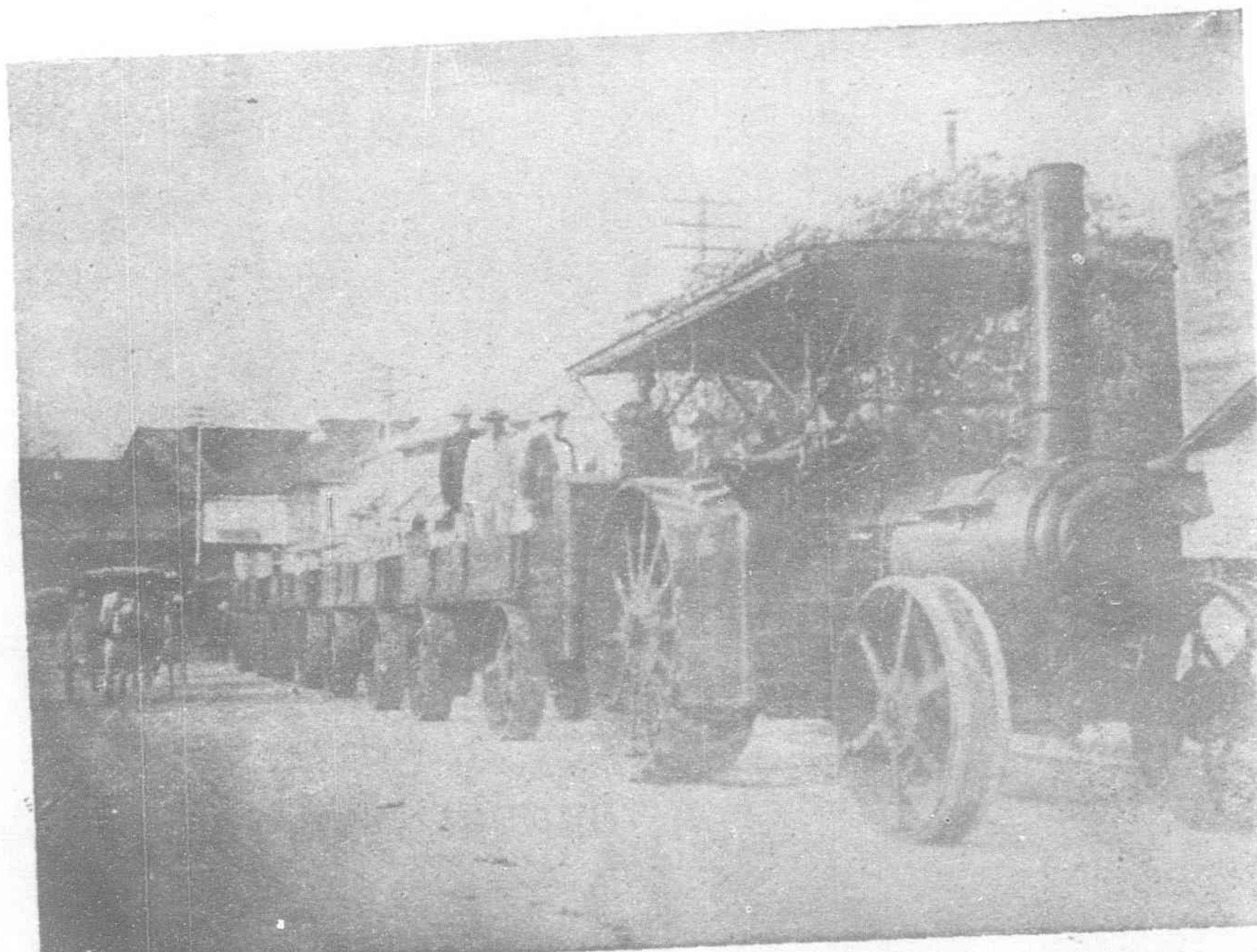
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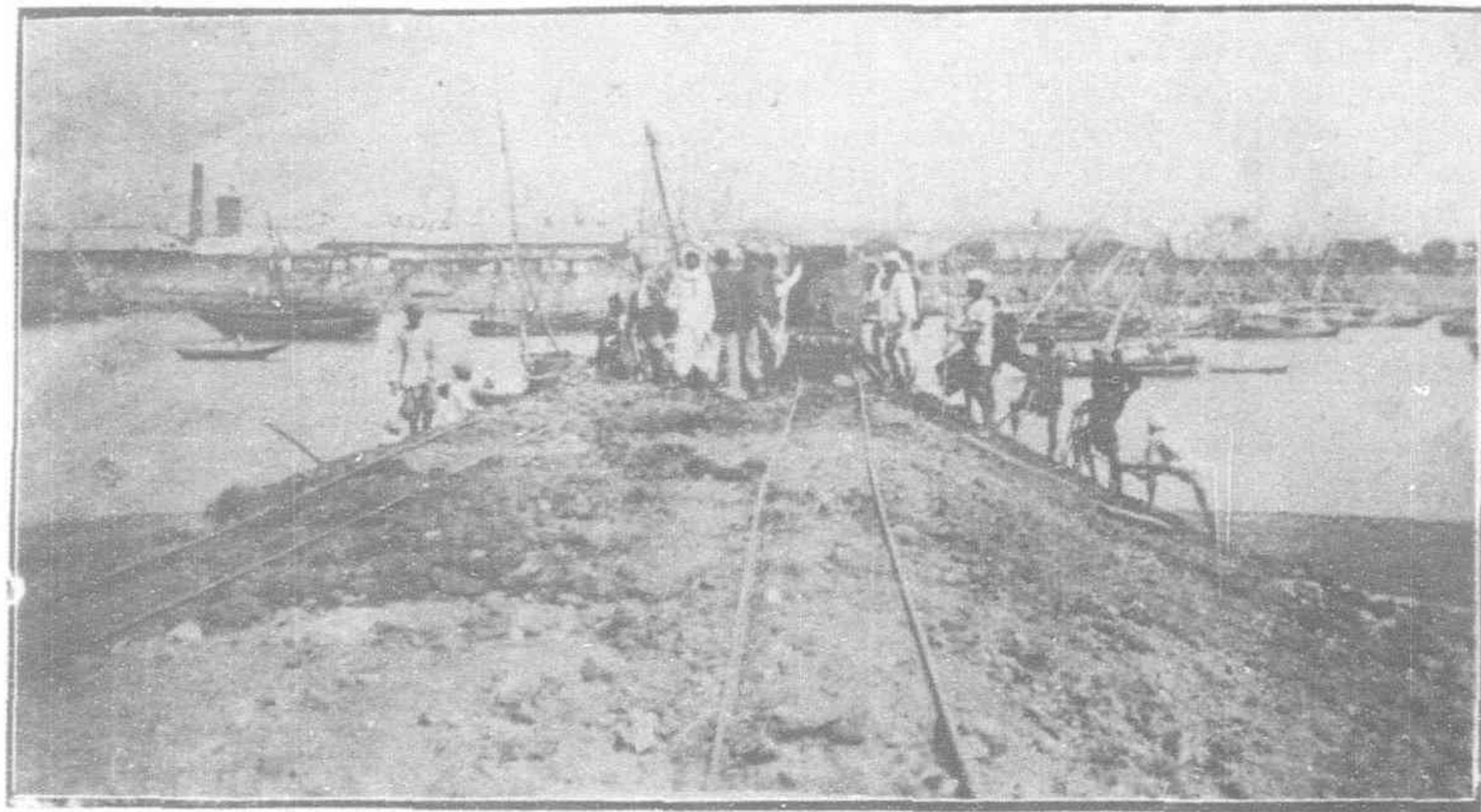
FINANCE

VOL. I.

MANILA, P. I., APRIL, 1905.

No. II.

BOMBAY PORT TRUST IMPROVEMENTS



NEW DOCK WORKS—BUILDING THE NORTHERN DAM.

There can probably be no more conclusive indication of the importance and growth of a thriving sea-port than that afforded by a study of its dock accommodation, for the facilities rendered by the latter in relation to the rapid loading or discharging of steamers form a strong incentive to the attraction of mercantile vessels to a commercial port. Nowhere on the Coast of India has this been more in evidence than at Bombay, where with the provision of modern docks, the import and export trade of the city has undergone wonderful expansion, especially during the past thirty years, for from official statistics it is found that whereas in 1870-71 the tonnage of the port was only 669,718 tons it had risen in 1902-03 to 2,641,420 tons, while the average revenue of the Port Trust was, for the five years ending 1877-78 Rs. 14,97,000 (\$499,000) and for the year 1903-04 Rs. 64,00,000 (\$2,133,333).

These figures indicate a development of trade that warrants some reference to the progress of the docks connected with the city. Those earliest constructed were known as the Upper, Middle, and Lower Bombay docks, now included in the area of the Government Dockyard. The first of the three was built about the year 1736, and the second and third added as extensions at later dates. In 1763, when Niebuhr, the traveller, visited Bombay he stated: "Two basins have been hewn out of the rock in which two ships may be at once careened. A third is now preparing. This work, which is very expensive, brings in a considerable return." Grose, a writer in the East India Company's service, in 1772 published his book, "A Voyage to the East Indies," wherein is found a plan showing the docks, which are at the present time used for the cleaning and refitting of Government vessels.

The Upper Bombay Dock is 209 feet, the Middle 183 feet, and the Lower 256 feet in length, the latter two being capable of being thrown into one dock. They appear to have sufficed for the requirements of the port down to about 1810 when the Upper and Lower

Duncan Docks were constructed alongside. The former is 286 feet, and the latter 246 feet in length, the first named having been twice lengthened previous to 1849.

These, in the latter year, formed the only docks of the Port, and it is doubtful from records available at the present time, if they were then used by trading ships.

It would appear that somewhat over half a century ago the first well-defined scheme for building commercial docks assumed definite form. About that period a Mr. Heycock, acting as the spokesman of a body of merchants, came forward with a project for laying out a line of enclosed water areas, which were intended to occupy a site adjacent to that upon which the latest Bombay Dock Extension is now being carried out. Mr. Heycock brought forward his proposals during the Government of Lord Elphinstone. The latter referred the matter to a committee, and other wild schemes then coming to the front the committee recommended the erection of docks near the Apollo Bunder. In those days it was estimated that 11,000 tons of inward and outward shipping required to be provided for, and this led to unpracticable suggestions for other docks at different parts of the Island, such as Back Bay and Warli Bay.

There was then little or no accommodation for shipping if we exclude the small Sassoon Wet Dock, at Calaba, and the graving docks at Mazagon. Following on the reclamation of vast tracts of foreshore on the harbor side of the city, during the share mania days, proposals for more modern dock space began to assume definite form about 1873 or 1874, and comprised the building of a large, enclosed waterway on the Elphinstone Estate near Wari Bunder.

The foundation stone of the dock, now known as the Prince's Dock, was, on the 11th November, 1875, laid by King Edward VII, who was then, as Prince of Wales, making a tour through India. The dock is 1,460 feet long by 1,000 feet in breadth, with a water area of 30 acres. It was completed and opened by Sir R. Temple, the then Governor of Bombay, in

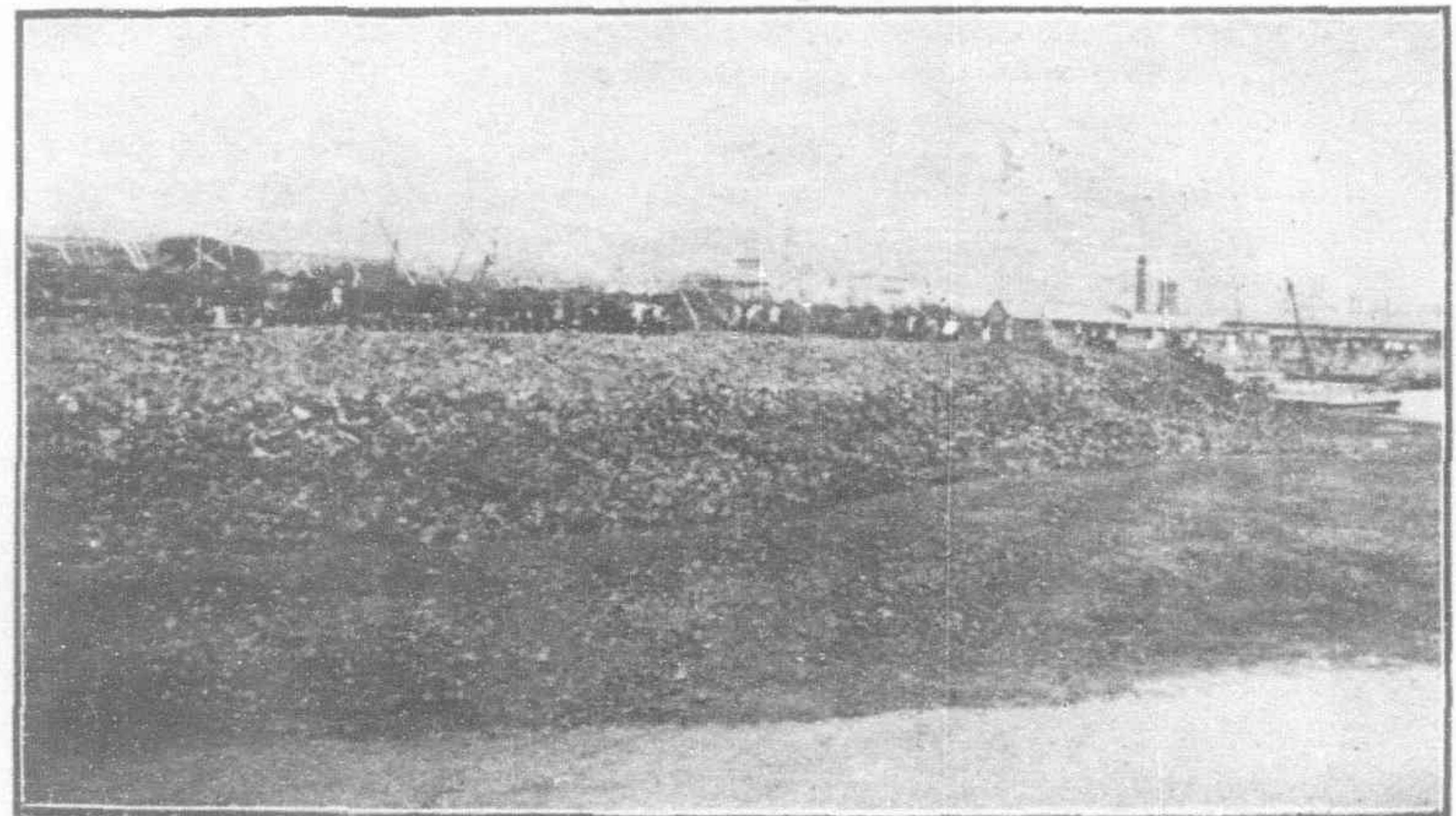
THE NORTHERN DAM.

April, 1879, and cost Rs. 67,43,396 (\$2,244,465). It has two entrances, one of 60 and the other of 55 feet, with a depth on the sill at high water of 26 ft. 6 in. and is approached from the harbor by specially dredged channels. This dock has a total quayage of 5,960 feet inside and 950 feet outside and transit shed area of 406,209 square feet, together with a warehouse space of 170,474 square feet. It is provided with one 30-ton and fifty-three 30-cwt hydraulic cranes, the power for which is supplied from two large power houses at the north and west corner of the dock. The Merewether Dry Dock, 525 feet long, with a 65 feet entrance, was subsequently constructed and is extensively used for cleaning and repairing steamers.

The Prince's Dock for a few years was found to comply with the needs of the Port, but it was not long before it became apparent it was not capable of meeting the increasing trade, the extent of the latter being shown by the fact that about 1883 the yearly revenue of the Port Trust had risen to an approximate total of Rs. 40,25,000 (\$1,341,666.) In order to provide greater facilities for shipping, the construction of the Victoria Dock was decided on, the site selected being formerly occupied by the Nicol Musjid Basins. The dock was opened in March, 1888. It has a water area of 25 acres, an outside quayage of 380 feet and inside quays measuring 7,425 feet in length, an entrance gate 80 feet wide with 28 ft. 6 in. of water on the sill at high tide. Its tranship sheds have an area of 524,000 square feet and its warehouses a space of 186,034 square feet. On its quays are fifty-six 30-cwt crane and one crane capable of lifting 100 tons, worked from two hydraulic power houses, one of which has recently been erected at Carnac Bunder, at an estimated cost of Rs. 4,03,000 (\$134,333).

For the space of the next fifteen years the Prince's and Victoria docks were found to meet all average requirements, but latterly the demands for space for steamers has proved so great that the existing want of berthing room has resulted in many vessels having to discharge and load in the harbor.

(Concluded on page 13.)



FAR EASTERN REVIEW

COMMERCE :: ENGINEERING :: FINANCE

PUBLISHED MONTHLY

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MANILA, APRIL, 1905

COMMERCIAL MUSEUMS IN THE EAST.

The New York Export and Import Company, one of the largest American concerns operating in the Far East, has opened a branch house in Manila, and is fitting up extensive show-rooms for samples of the different machinery and tools it is selling agent for. This Company represents many of the better class of American manufacturers who prefer to extend their Oriental trade through established channels. As a means to this end they send out full lines of samples, including machinery, engines, etc., for exhibition purposes. Of course this method is employed to a more or less extent by every manufacturer's agent, whose samplerooms are a veritable commercial museum in embryo.

The Commercial Museum scheme which has been started by the Insular Government in a half-hearted manner, is generally supposed to be an aid to the manufacturer to place his wares before a possible purchaser and awaken an interest looking towards new business. We have noted that the scheme in Manila has failed to meet with that hearty cooperation from the American manufacturers which it should receive, and requires an explanation and possible remedy, or reorganization, along other lines.

One of President Roosevelt's recommendations in his last annual message to Congress, related to enacting legislation recommended by our Consuls for extending our trade with the Far East. It seems that our former Consul-General at Shanghai had forcibly advocated an appropriation for the purchase of a tract of land in that city, for the con-

struction of wharves, docks, piers, warehouses, etc., for the purpose of facilitating America exports, and for the erection and maintenance of a building for the display of American products in that city, and for the appointment of a Commissioner to have charge, and for other purposes,—in other words a vast Government Commercial Museum.

Senator McCumber, of North Dakota, presented a bill covering these recommendations and championed it in the Senate, but it was finally referred to the Department of State, for report. The Assistant Secretary of State very wisely sent it to the American Asiatic Association for consideration and comment. Now this Association is composed entirely of firms interested in the Far Eastern trade, and are the best judges of what would benefit them in enlarging the scope of their operations. Instead of welcoming the proposition as an aid, they very flatly stated that on the contrary it would more likely be a hindrance.

The Executive Committee of the Association declared in reply that it was constrained to believe that the scheme would be productive of no such advantages to American trade as were anticipated from it, and that it might possibly have embarrassing results. Four years previously a similar experiment had been made under the auspices of the American Manufacturers' Association, which ended in disastrous failure. The personal character and capacity of the Government Commissioner might conceivably be such as to eliminate many of the elements of failure which had attended the venture of the Manufacturers' Association. But, even assuming that the President were able, by the offer of a salary of \$5000 a year, to secure the services of a man possessed of the highest diversified knowledge and extremely varied experience and ability required for the duties outlined in the bill, the fatal objection to the sample wares house method of promoting trade, in that or any other distant foreign market, is that to be of any serious value the establishment must be equipped not only for the exhibition of samples, but for the taking of orders for the merchandise which the samples represent. In short, the Government's sample warehouse would have to enter into competition with the business of private citizens and its Commissioner would himself have to become a merchant and importer. It was, therefore, declared to be the judgment of the American Asiatic Association that the true sample warehouse in a great commercial port like Shanghai, where all departments of American commerce are already represented, is the place of business of the American importer, and that no official Commissioner could possibly be selected for the active promotion of American trade so energetic, resourceful, and capable as the men in charge of the interests of established American houses.

This opinion is no less just today than it was a year ago, and we believe that the opinion of this deeply-interested Association is final on the subject, and little help can be expected from its members towards the successful building up of a Commercial Museum here. The same reasons which held good in Shanghai, hold good here, and unless the scheme undergoes complete reorganization, the present Museum will drag along its weary way to ultimate and complete failure. Already it is in direct conflict with enterprising American firms who are coming in, for instead of a main exhibit of American goods, the impression gained is that it is a collection of Oriental products. American manufacturers who send out a complete line of samples to local representatives, are confident that their goods will be pushed, and will hardly ship a duplicate set to a museum, where they are displayed side by side with foreign and cheaper products.

A successful Commercial Museum will call for an immense floor space, and with the present state of the finances we fail to see the advisability of appropriating a large sum for such a purpose in the future, especially as the scheme fails to meet with the approbation of those most deeply interested.

OUR INDUSTRIAL DEVELOPMENT

One of the noticeable signs of the times in Manila, demonstrating the keen interest manifested in the industrial development of the Islands, is the marked activity shown in the sale of modern machinery, agricultural implements, and labor-saving devices. The advertising pages of THE FAR EASTERN REVIEW at present are a barometric reading of this upward and optimistic tendency, and indicative of increased confidence in the immediate future. The proximate opening up of the interior by the building of railroads, the increased activity and interest shown in general industry, and the almost certain concession of free trade with the home country, with the attendant development of the sugar industry, are all being anticipated by our conservative merchants. The machinery and allied trades have been dormant here for several years, the older houses seeming to be willing for the new comers to pick up what they could in these lines. The success following the new campaign has had the effect of creating a renewed interest and a determination to widen the market.

One of the first of the older firms to recognize the possibilities of the near future, was the old established house of Messrs. Findlay & Co. Since 1826 this firm has been identified with Manila, carrying on business without a break for eighty years, under different managements. The engineering department of this firm has lain dormant for a number of years, the main efforts of the house being directed towards the general importing and exporting trade. Formerly the firm supplied many of the sugar estates with mills, and has recently actively re-entered the field. Under the guidance of Mr. Wm. Swan this branch is now receiving adequate attention, and several good orders have been secured. As the agents of Messrs. McOnie, Harvey & Co., of Glasgow, one of the foremost manufacturers of modern sugar machinery in the world, Messrs. Findlay & Co. are prepared to hold their own in the field against any competition, as the reputation of the firm is of the highest, and it has successfully held its ground in all other sugar-producing countries. Messrs. Findlay & Co. recently secured the agency of the Alsen Cement Company of Hamburg, and also represent several of the largest engineering firms in Great Britain.

Another sign of great interest to the general engineering community of the Philippine Islands and the Far East, is disclosed by the advertisement of the Westinghouse Electric and Manufacturing Company, which appears for the first time in this part of the world, in this issue of THE FAR EASTERN REVIEW. Although this Company has maintained an agency for some years in Japan, with Messrs. Takata & Co., of Tokyo, the appointment of Messrs. Castle Bros-Wolf & Sons, of Manila, to look after its interests here, is a decided step forward for the Islands, as it betokens the enterprise of the new agents and the importance the field is assuming among the large manufacturers of the world, and their desire to be well represented. Mr. Loewenstein, the local manager of Messrs. Castle Bros-Wolf & Sons, successfully closed the arrangements for this important agency during his recent visit to the United States, and the Westinghouse Company designated one of their ablest engineers in the person of Mr. F. H. Thompson, to attend to the management for the agents. Mr. Thompson has been in Manila for nearly a year superintending the erection of the power house machinery for the new electric street railway in the interests of the manufacturers—the Westinghouse Company,—and will take up his new duties when the plant is turned over. He has previously installed several other large power houses for the Westinghouse people in different parts of the world, and is a welcome addition to our permanent resident engineering community.

The advertisement of Messrs. Orenstein & Koppel, of Berlin, the well-known German manufacturers of railway material and supplies, also appears in THE REVIEW, this issue, for the first time, through their local agents, Messrs. Moll, Kunzli & Co. Messrs. Orenstein & Koppel have a world-wide established repu-

tation for their products, and although they have not actively entered the Philippine field before now, they have branch houses in other parts of the East, notably in Java and Calcutta, where an extensive business is carried on, especially in industrial railways and material. They also carry on a successful trade with the United States, in direct competition to American manufacturers, and their presence here, at this time, demonstrates that they are keenly alive to the possibilities, and are determined to secure their share of the business. A few of our American manufacturers of railway material could adopt a little of the characteristic German push in extending their Far Eastern markets, with profit.

In fact, this issue of THE FAR EASTERN REVIEW carries, with only a few exceptions, the advertisements of all the engineering and machinery houses of Manila, as well as several from the China Coast. The advertisement of Messrs. Manuel Earnshaw & Co., one of our leading engineering firms, also appears for the first time in this issue, and we take it as a tribute to the excellence and value of the publication, recognized after months of earnest endeavor.

We are more than gratified at these marks of esteem, as we have labored conscientiously for eleven months to win the confidence and support of this element, feeling that our success as an engineering and industrial journal would depend largely on our gaining the initial support of the local community. With this support assured, we can now hope to extend our influence to the larger manufacturers in the United States and Europe, with some prospect of ultimate success, and eventually build up a journal that will be a credit not only to Manila, but to the entire Far East.

MANILA'S ELECTRIC RAILWAYS.

Monday, April 10th, witnessed the formal opening of the Manila electric street railway system to the public.

The ceremonies incident to the event were interesting and impressive, though exceedingly simple. They were witnessed by a great concourse of people, all of whom seemed to be thoroughly alive to the importance of the occasion.

It is to be regretted that the Governor-General could not be present in person, but that he was with us in spirit is shown by the following telegram received from him at Baguio, his official summer residence:

"To Richard T. Laffin, General Manager of the Manila Electric Railroad and Light Company:

"Hearty congratulations on the successful completion of your road, which is the first movement in the direction of improved inter-communication and rapid transit in these Islands, by American energy and enterprise.

"It is a notable event and I regret exceedingly my inability to be present to take part in the opening ceremonies.—(Signed) LUKE E. WRIGHT, Governor-General."

The Government was represented, however, by Commissioner W. Cameron Forbes, Secretary of Commerce and Police, and Mr. Arthur W. Fergusson, Executive Secretary, while Mr. Percy G. McDonnell, of the Municipal Board, represented the city of Manila. The railway company was represented by Mr. Thomas C. Kenney, attorney for the corporation, and Mr. Laffin, while the firm of J. G. White & Co., contracting constructors of the system, was represented by Mr. Belden, engineer-in-charge of the work.

Three of the most important lines of the system are now in operation their entire length. It is expected that before the rainy season sets in the entire system will be giving service.

Everything considered, Manila has reason to feel proud of the new street railways. They are modern in every respect, and it is safe to say that, when the entire system is in operation, no other city in the world the size of Manila will have better and more serviceable facilities for inter-communication and rapid transit than we have. It has taken the Swift Syndicate less than eighteen months to accomplish this great public improvement, and judging from

the efficiency of the service already tried the promoters have not only built thoroughly, but they have given us a street railway system that will stand the test for an indefinite period to come.

In the next issue of THE FAR EASTERN REVIEW there will be produced a splendid illustrated description of the system, which could not be accomplished with satisfaction this month on account of our inability to secure good photographs.

INCREASE SALARY OF ENGINEERS.

A resurrected local paper, "which was never run for the money there was in it" (*sic*), makes its bow to the public by coming out as the champion of decreasing government expenses.

In seeking the support of the commercial element of the city, considerable space is given to an article airing the editor's ideas of just where the pruning knife should be employed.

Nobody realizes the necessity of cutting down expenses more than the members of the Commission and long before the appearance of the article in question they had determined on this measure, and a committee is now at work investigating the different bureaus with the idea of instituting more economy in their management. So the star appeal of the resuscitated editor for the support of the merchants, has been anticipated.

The lawyer editor in wielding the revised appropriation axe, is merciful to those of his own ilk and the departments which help bring in the criminals to insure them a living, but to those on whose labor depends to a great extent the industrial development of the Islands, and who are absolutely indispensable to the general welfare of the community, he would cut off with a miserable pittance. Rigid economy should not be applied to the judiciary, oh no! or the members of this honored body might become corrupt. Ten thousand a year is not too much for a Supreme Court judge, or \$4000 for a lesser judicial light, but \$5000 is altogether too high for a Consulting Engineer to the Commission, on the plea that it is more than a "poor little country like the Philippines can afford."

The implied insult to the engineering profession is so marked, and the covert attempt to throw discredit on the most valuable men in the community so evident, that we can not let it pass without comment.

What we need in the Philippines at present is engineers, and the best that can be secured. This is the era of industrial reconstruction, of large public works and improvements, involving the expenditure of millions of dollars. An incompetent engineer in charge of the Government improvements, can in one year sink more of the people's money and make the burden of taxation higher, than would pay the judiciary of the Islands for years.

We are surfeited with judges, laws, and lawyers. We could dispense with a few of them until the country is developed by competent engineers.

We have been exceedingly fortunate in our selection of men of the engineering profession for our insular and municipal bureaus, and they deserve more consideration from the public appropriation than any other class.

It is the engineer who plans and gives honest work to the masses, and creates prosperity; and with the revival of industry in the Islands, the work of the pettifogging lawyer and all the elements which make for his success will have disappeared, and we can dispense with some of our judicial headlights.

The publication making this bid for the support of "first-class business men only," is entitled *Justicia*, Eber C. Smith editor. It appears in an editorial explanation that a long time ago its publication was discontinued on account of a visit of the editor to the United States, and after a careful perusal of its thirty-two pages, we see no reason why Mr. Smith should refrain from again visiting the States at the earliest opportunity.

NEWSPAPERS AND POSTAL "FRANK."

It would seem that the proprietors of our native dailies have failed to learn from experience, and would continue in their attempts to embarrass and annoy the Commission on trivial and impossible matters. We refer particularly to the recent agitation originating in the native press, advocating the franking privilege through the mails for newspapers, and for the abolition of the duty on paper.

The first proposition is decidedly a piece of class legislation, foreign to American methods, and even though there might be some excuse for granting such a concession in the homeland, here in the Philippines, where native papers are created over night to further the ends or ambitions of some political clique, and to propagate ideas antagonistic to the Government, such a privilege would only result in this step causing further friction and trouble.

We believe that the reputable press of the Islands has been treated generously by the Government, and the establishment of the United States Postal Regulations, admitting newspapers to the second-class or pound rate, is certainly a reasonable tariff and one which all should be willing to bear. The second-class postal privileges are a guarantee for reputable papers, and to a certain extent protect them from the cheap advertising schemes constantly springing up under the cloak of journalism.

Probably in no place in the world have these schemes been so successful as in Manila. The merchant and public have been surfeited with all kinds and classes of advertising schemes emanating from cheap fakirs claiming to be newspaper men. Save the mark! Men who never saw the inside of a newspaper office before their arrival in the Islands, and who are unable to fill the position of a "cub" reporter in the "Jehawville Gazoo," have blossomed out as publishers and editors, pestering the life out of the business community until it is weary and sore at the many impositions, with the result that reputable newspaper men have to suffer for the mistakes of the fakirs.

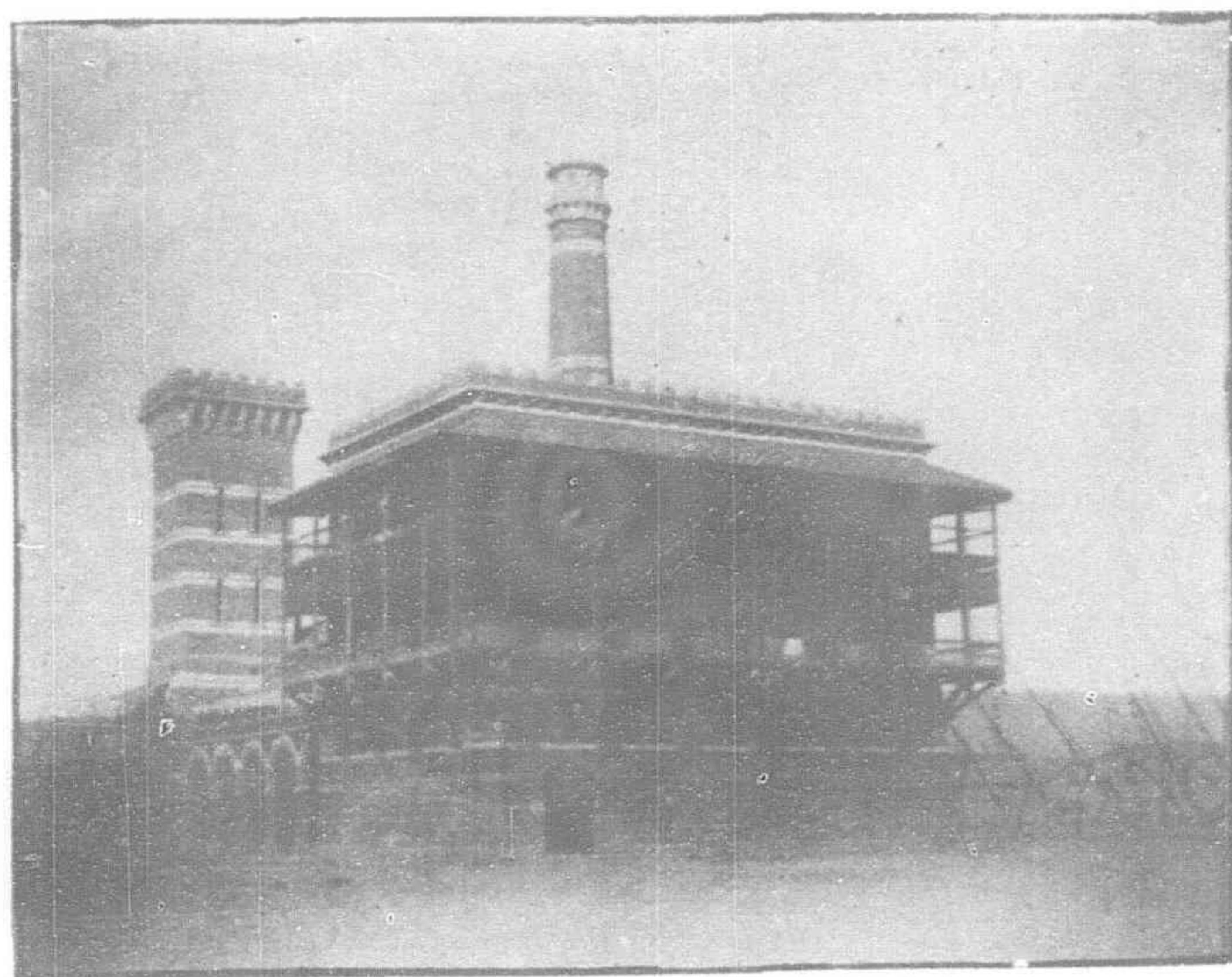
The merchants have stood for all this in a spirit of good fellowship, and have steadily increased their advertising appropriations out of all proportions to the volume of business done, until the limit has been reached. With four daily English papers, several in Spanish and Tagalog, three English weeklies, three directories, several monthlies, and the ragtag and bobtail of cheap advertising schemes, programmes, etc., it would seem that the legitimate and illegitimate field was well covered.

But still they come. And to make the path to success smoother, the native press now seeks the franking privilege.

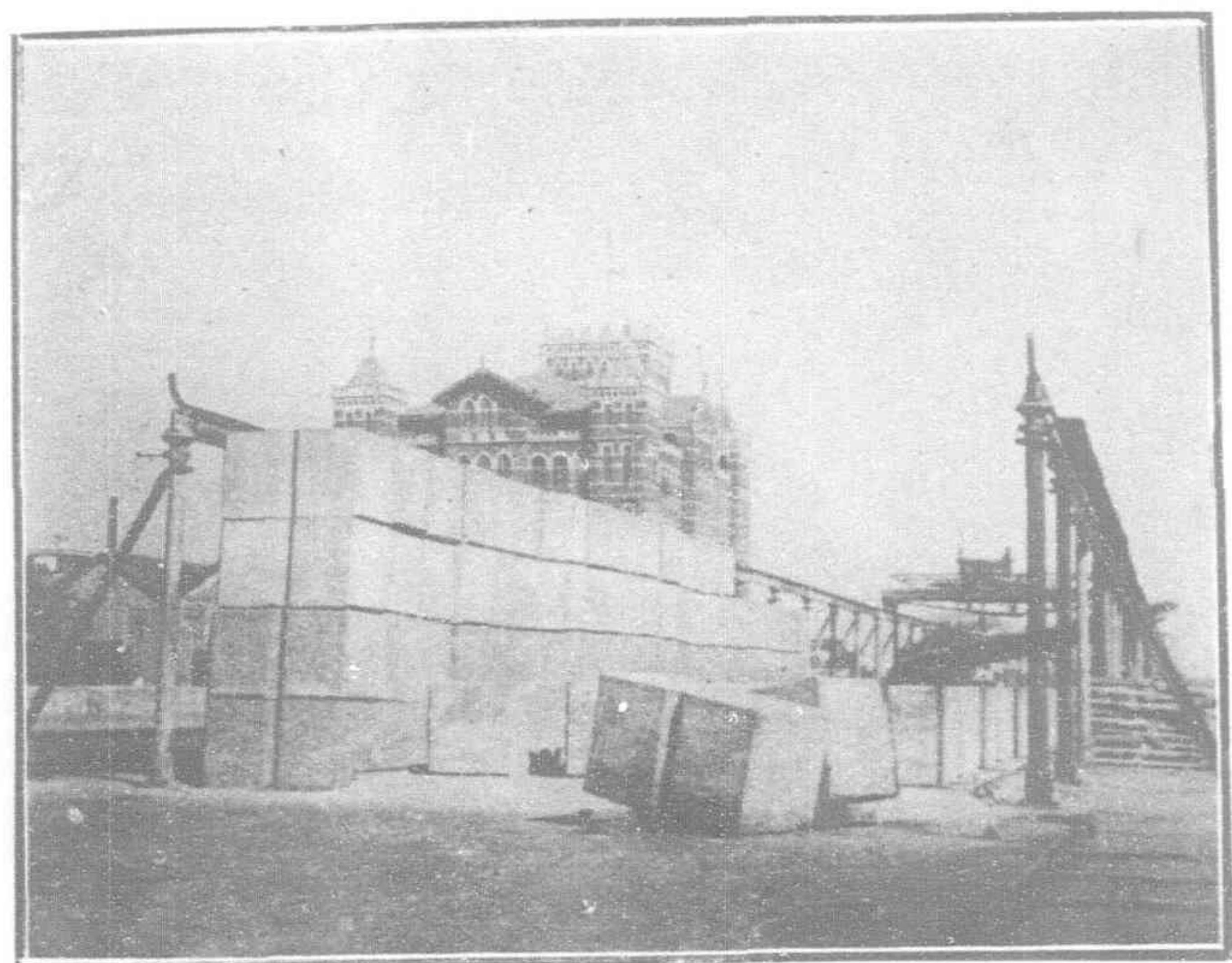
As a protection to the reputable press, and to the men who have through hard work earned the title of newspaper men, we can not subscribe to any such measure. Instead, we would hail with delight the imposition of a heavy tax or license on newspapers, magazines, advertising agents, etc., thus contributing our share to the general taxation, and at the same time placing a check on the fakirs and others who have done so much in Manila to injure one of the most brilliant and honorable of professions.

THE NEW CHINESE LOAN

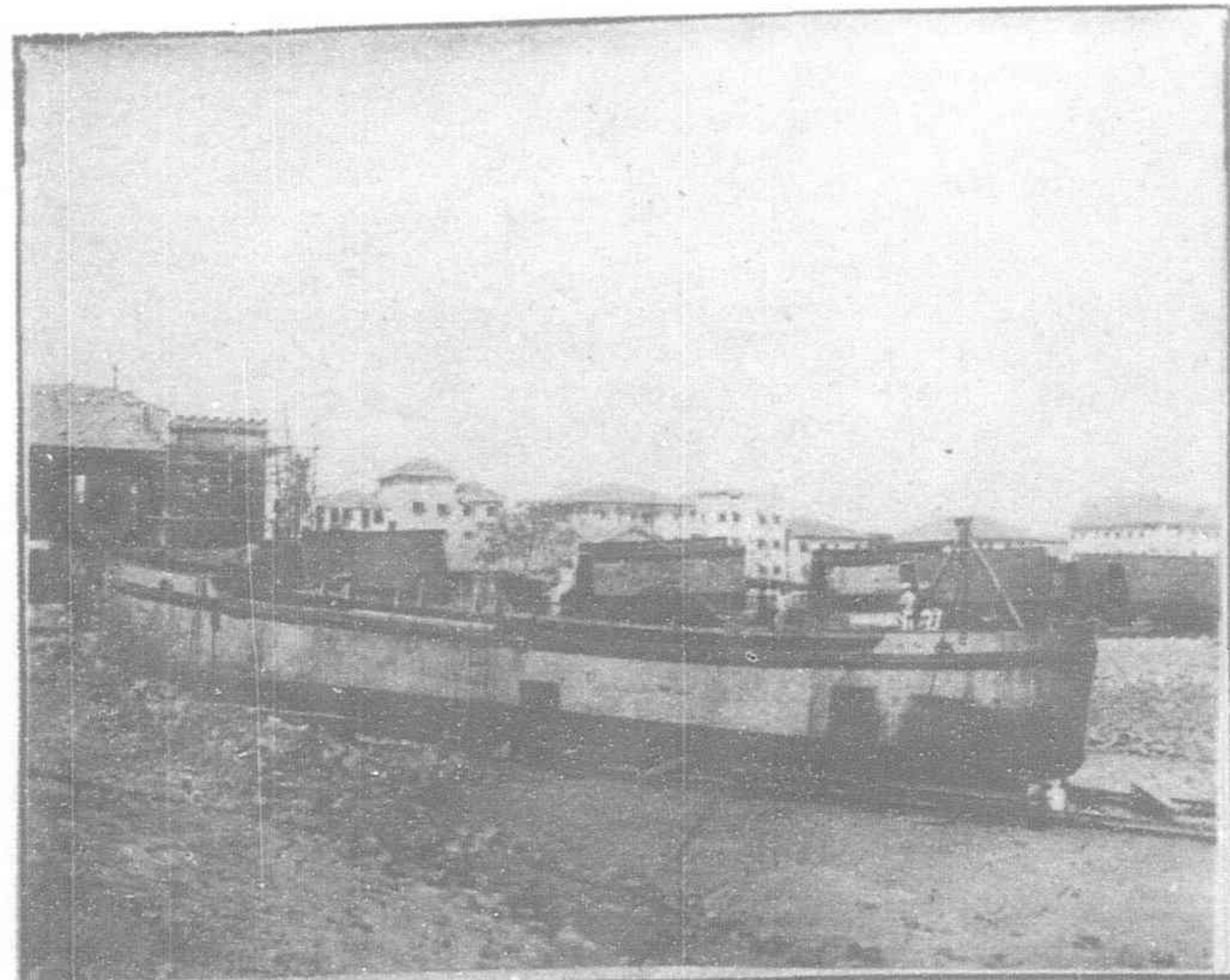
Subscriptions to the new Chinese Loan recently floated totalled up to not less than thirty times the amount, some applications being for very large amounts, and in two instances for the whole loan. Practically, enough was offered before even the lists were opened to the public. Some time before the doors of the Hongkong and Shanghai Bank, in London, were opened, at 10 o'clock in the morning of the day the loan was closed, a considerable crowd had collected, and there was a regular football scrimmage for prospectuses, and the cashiers were soon inundated by applications. After an hour's struggle the Hongkong and Shanghai Bank declared the loan closed. In Germany a like result was attained for the other half of the loan. The lists were open for less than an hour, during which time the amount was taken about sixty times.



NEW HYDRAULIC POWER HOUSE, CARNAC BUNDER.



NEW DOCK WORKS—CONCRETE BLOCKS FOR BREAKWATER.



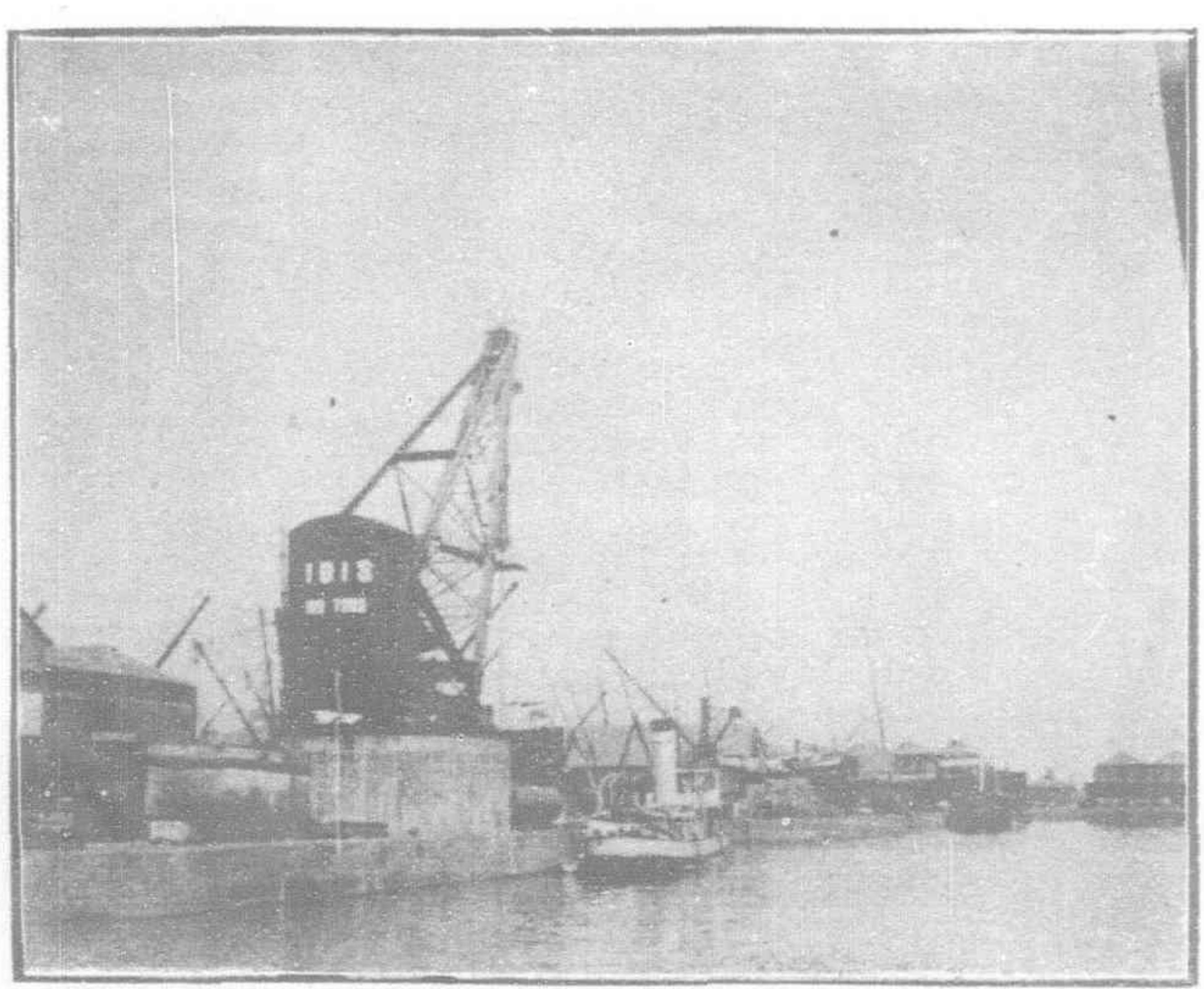
HOPPER BARGES FOR NEW DOCK CONSTRUCTION, NOW BUILDING



NEW DOCKS—COOLIES EXCAVATING.



BUILDING SOUTHERN DAM—MALLARD PIER IN THE DISTANCE.



THE VICTORIA DOCK.

(Continued from page 9.)

This state of affairs has resulted in the Port Trustees electing to construct another dock, which, when completed in accordance with the plans prepared by Mr. P. Glynn Messent, M. I. C. E., Engineer to the Trust, will, it is believed, be the most extensive in the East. The site selected is to the south of Carnac Bunder. The dock is to have a water area of close upon 50 acres and an inside and outside quayage of 9,883 and 2,608 feet respectively. It will be entered through a tidal lock giving access for vessels of deep draught at all states of the tide, and at its southern end a dry dock, 1,000 feet in length, is to be built. Outside the dock entrance berths are to be provided for the outgoing and incoming mail steamers from and to which passengers will be able to step from or into the overland trains for Calcutta, Madras, the Punjab, and other up-country cities. The plans as sanctioned by Government provide for an expenditure of Rs. 3,32,00,000 (\$11,066,666) on the new works and in April last the contract for excavations and masonry were let to the English firm of Messrs. Price, Wills & Reeves, for Rs. 1,85,01,015 (\$6,167,005).

The latter scheme may be described as consisting of two parts, one the construction of the dock proper and the other the reclamation of the water area between the Shell Transport and Trading Co.'s bulk oil depot and Ballard Pier, which, together with the other oil depots on the site, will subsequently be removed to a point to the north of the harbor. For some months the contractors have been actively engaged on preliminary portions of the great work entrusted to them. Some four thousand 5-cwt concrete blocks are being made for the Ballard Pier extension, a large and powerful steam dredger and two special steam hopper barges have been purchased at an estimated cost of Rs. 10,93,500 (\$364,500) for dredging and deepening the approaches to the dock, while numerous other hopper barges are being constructed for use in building the dams which are ultimately to protect the works connected with the erection of the outer dock walls. At the present time the area east of the Frere Road presents a scene of great animation, gangs of coolies, male and female, being engaged in building two dams running north and south of the bunder known as the North Reclamation. The material for the northern dam is excavated on the spot, while that for the southern dam is brought to the site by country boats from Elephanta Island. The first named earthwork, when completed, will form the central jetty of the new dock and when finished will enable masonry work to be started on the south wall. A reference to the plans and views published in this issue should tend to an appreciation of the works completed and in progress. The space available precludes further reference to various details connected with the closing of thoroughfares, the removal of the timber and coal depots from the site and of other matters connected with the scheme. The latter, so far as construction is concerned, is only in its initial stage, but from what has been done up to the present there is every indication that the contractors and Port authorities are pushing on the scheme with all possible vigor.

The new dock is to be completed in about five years, the contractors having been promised a bonus of Rs. 4,00,000 (\$133,333) providing they complete their work by the 1st June, 1910, and should they earn this gratuity there is every indication that a few years hence Bombay will be the possessor of a line of docks of which its city may be justly proud.

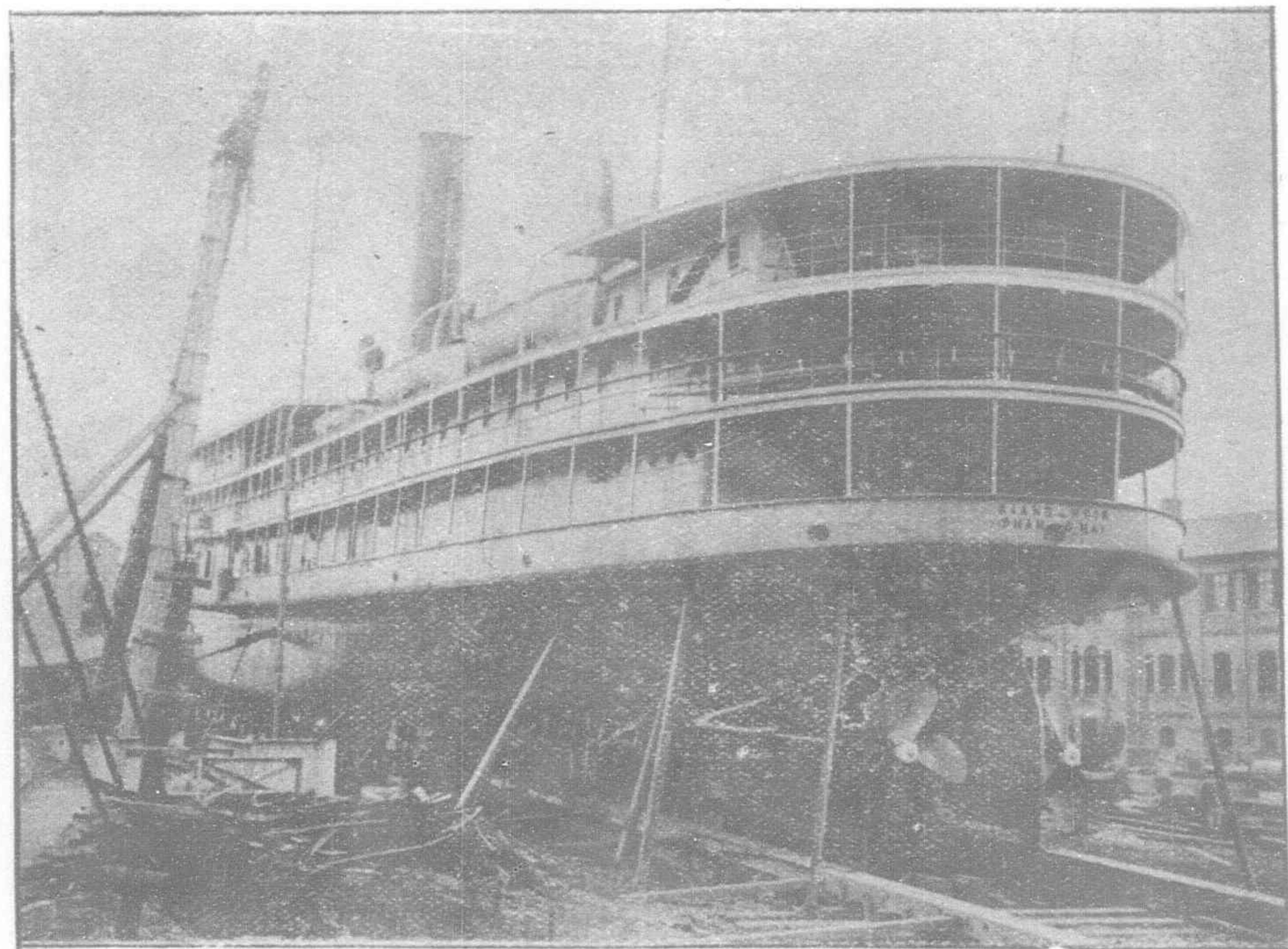
OSAKA AUTOMOBILE COMPANY

The Osaka (Japan) Automobile Company, which has a capital stock of -Y-150,000, will open a motor-car service early next month. Six cars, each having seats for ten passengers, will be run between the north end of the Nippon Bridge, in the city of Osaka, and Sakai and Obama, with stations at Imamiya, Tobita, and Tenka-chaya. There will be a 20-minute service.

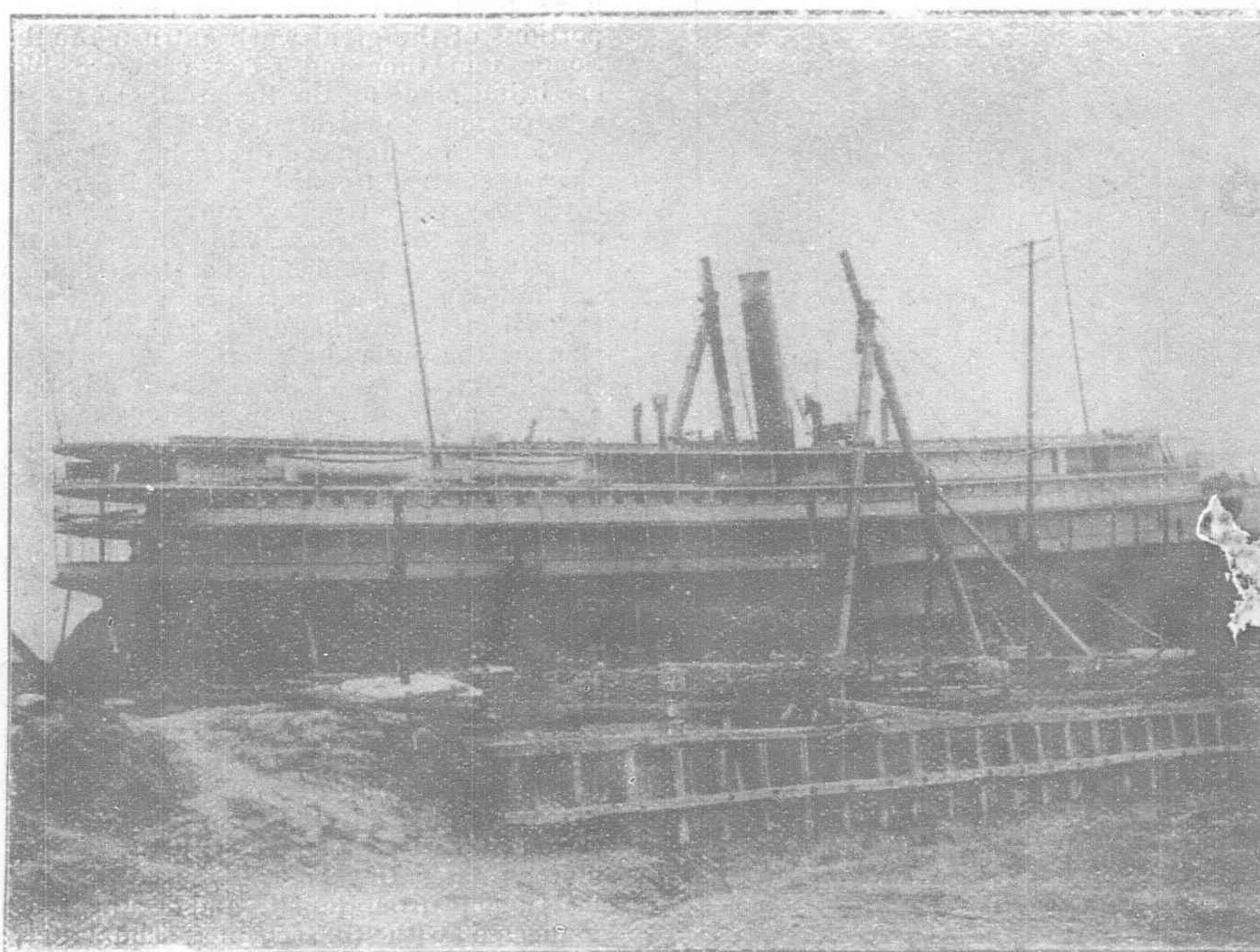


FINE NEW RIVER STEAMER.

Messrs. S. C. Farnham, Boyd & Co., Limited, of Shanghai, successfully launched recently at their Pootung Branch Works, a mild steel twin-screw river steamer, the *Kiang Hsin*, built to the order of the China Merchants' Steam Navigation Company. The dimensions of the vessel are 333 feet over all, 325 feet between perpendiculars, 44 feet beam and 14 ft. 6 in. moulded depth. She is specially designed for the requirements of the Yangtsze River Service, is rigged with two light pole masts and presents a graceful appearance on the water, notwithstanding her towering height. The vessel is divided into six watertight compartments by transverse bulkheads. Her dead-weight carrying capacity is 1750 tons on a mean draft of 12 feet. She is provided with very extensive passenger accommodation in light and airy houses on the upper and promenade decks. The saloons and cabins are luxuriously and tastefully fitted, and the vessel lighted throughout with electric light. The propelling machinery consists of two sets of triple-expansion, vertical direct-acting surface-condensing engines having cylinders 19 in., 31½ in., and 52 in. diameter by 33 in. stroke, supplied with steam by three single-ended cylindrical boilers 14 ft. 0 in. diameter by 11 ft. 6 in. long, constructed for a working pressure of 160 lbs. The vessel embodies in her various departments several new features designed by the Superintendent of the China Merchants' Steam Navigation Company, Mr. Weir, and represents one of the finest steamers afloat on the Yangtsze. The owners could not



STERN VIEW OF "KIANG HSIN" SHOWING TWIN PROPELLERS.



BEAM VIEW OF THE "KIANG HSIN" ON THE STOCKS.

have shown their appreciation of the excellent workmanship more marked than they have done by placing with the same builders a further order for a coasting steamer, the dimensions of which are to be 270 ft. 0 in. by 40 ft. 0 in. by 21 ft. 6 in., to be fitted with triple-expansion surface-condensing engines having cylinders 19½ in., 31¾ in. and 52 in. by 37 in. stroke, supplied with steam from a cylindrical return tube boiler 14 ft. 0 in. by 10 ft. 3 in. constructed for 160 lbs. working pressure.

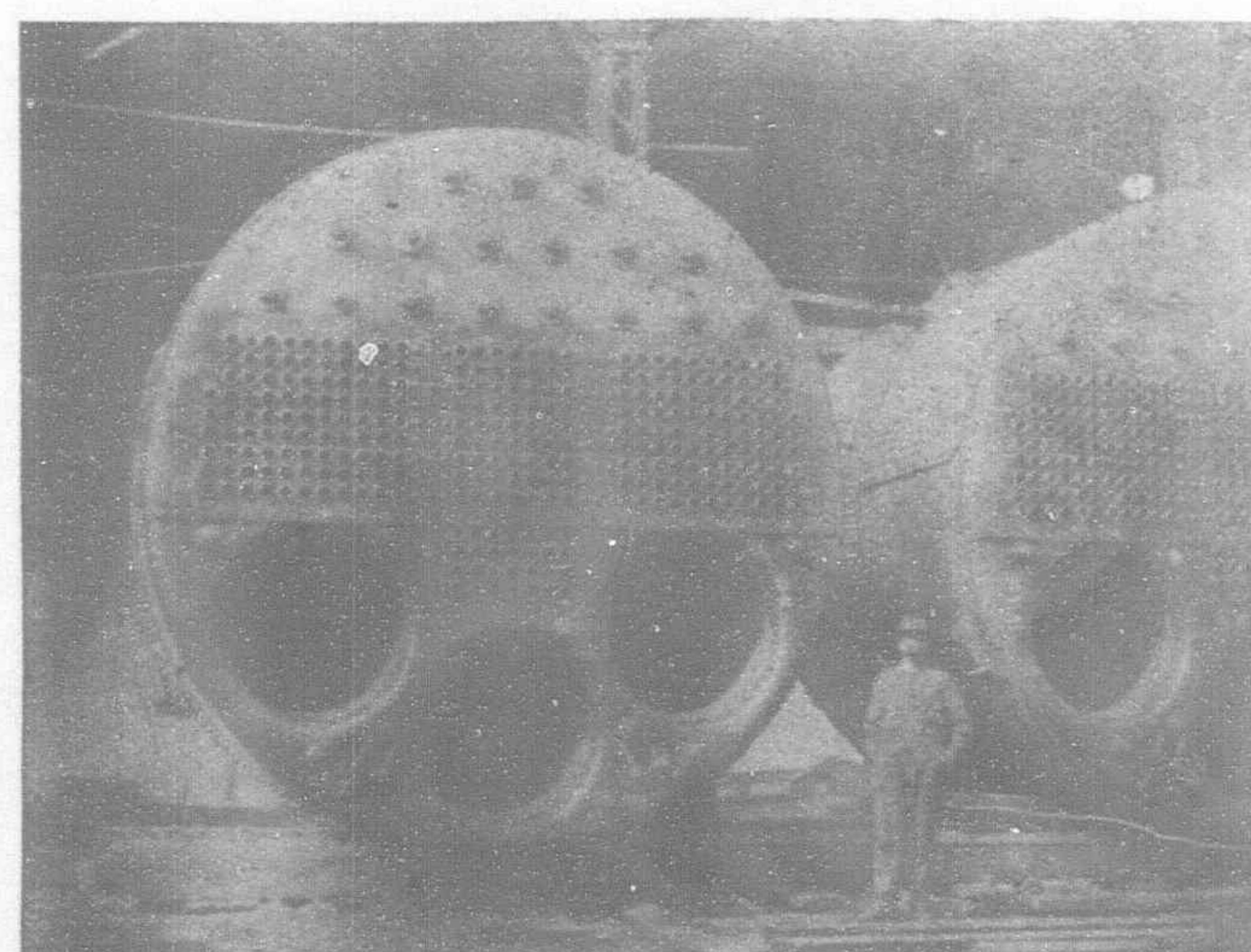
FORMOSA AND THE WAR.

Mr. Shimosaka, a director of the Bank of Formosa, who presided at the recent general meeting of the shareholders of that corporation in the absence of Mr. Yogi, the President, now absent from Japan in Formosa, told the stockholders on that occasion that the war had but little affected the economical situation of the island, according to *The Japan Chronicle*. For a time after the opening of the conflict, communications between the island and Japan and China had been somewhat

disturbed owing to steamers being taken up for transports, but this had now been rectified, in consequence of Japan's successes; the people of the island had remained quiet, and were absorbed in their pursuits. The construction of the Trans-Formosan Railway had much progressed, and over 200 miles are now in operation. Since the suppression of the bandits some years ago, the industries of the island had continued to develop favorably as a result of the measures taken by the Government.

Since the increase of the Sugar Consumption Tax, which came into force in April last, Formosa sugar has been placed on a better footing than foreign sugar, which of course has largely increased the demand for the Formosan product. During the last year there was unprecedented activity in the shipment of sugar to Japan, its value amounting to -Y-3,970,000, representing an increase of -Y-1,800,000 over the figures of the previous year.

The output of gold at Kelung, purchased by the Bank of Formosa in 1904, amounted to 440 *kwamme*, representing -Y-1,700,000, an increase of over -Y-400,000 in value as compared with the previous year.



"KIANG HSIN'S" RETURN-TUBE BOILERS.

RICE FARMING WITH MODERN AMERICAN MACHINERY

The last annual report of Mr. W. C. Welborn, Chief of the Bureau of Agriculture, Philippine Government, which has just been published, sheds considerable light on the progress agricultural industry is making throughout the Islands as a result of official experiments conducted by a large corps of expert agriculturists. Mr. Welborn agrees with the conclusion of his fiber expert, Mr. H. T. Edwards, that "if the Philippine Islands are to compete successfully with other parts of the civilized world in the production of the well-known commercial fibers, the introduction of fiber-extracting machinery will be an absolute necessity. Even abacá (Manila hemp), which has the great advantage of being solely a Philippine product, is now beginning to feel the competition of other cordage fibers which are extracted by machinery."

The requirements of, and demand for, an abacá-extracting machine have been brought to the attention of inventors, both in the Islands and in the United States, says Mr.

to give the best results. It requires too much labor in the construction and maintenance of so many dikes to flood the land properly, and these numerous dikes interfere in great measure with the work of labor-saving implements and machinery.

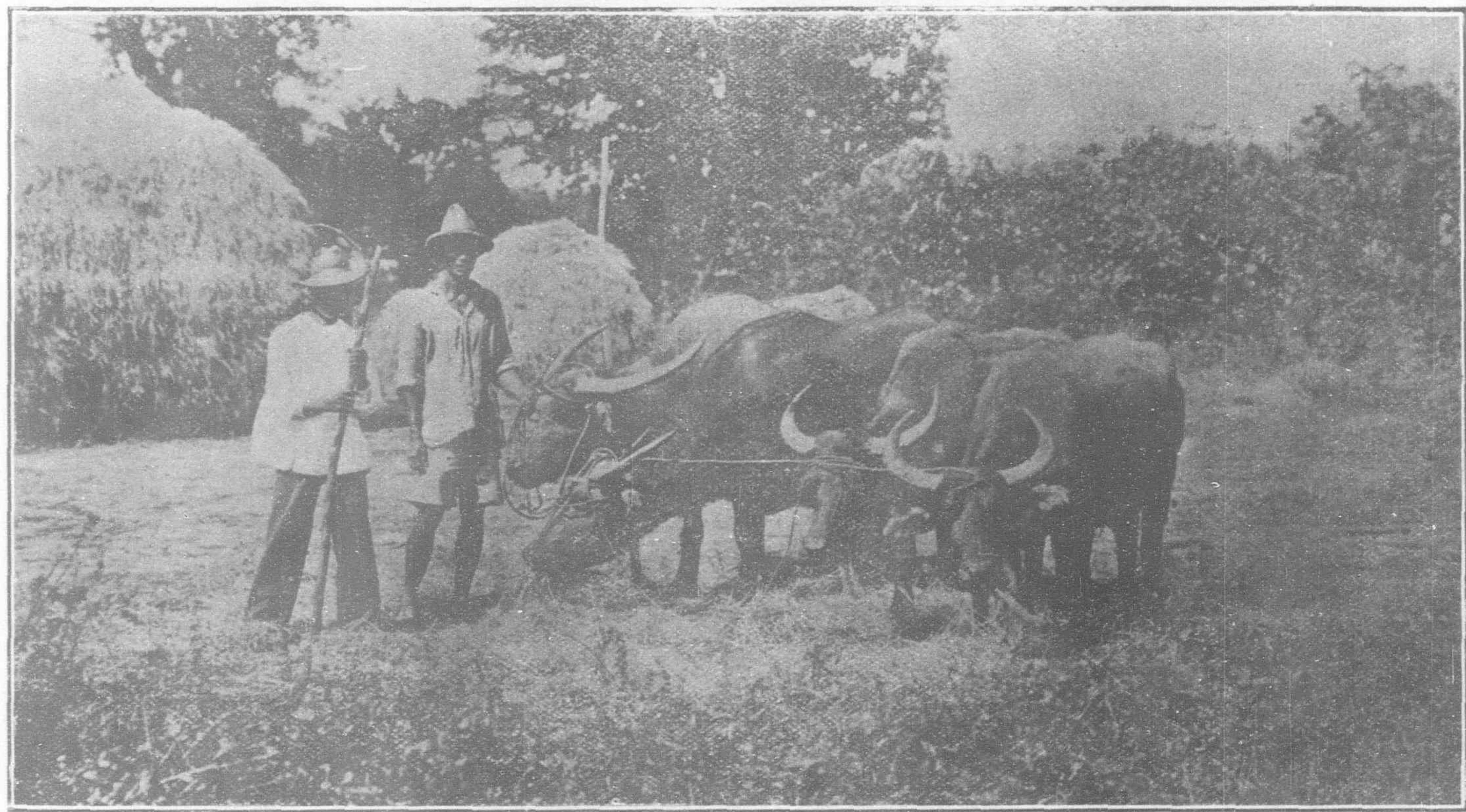
About 1,000 acres of land in the tract are capable of being put under cultivation. Fully 800 of this have been cleared, diked, and for the most part planted. About 600 acres, it is now estimated, are in growing rice, and 200 more will be put in by the middle of October, when the season for planting is over.

The last wet season crop, which is the crop mainly relied upon in this section, consisted of only about 30 acres, on which the yield was very good. A crop of some 400 acres of off-season rice was put in for the dry season. This was all planted in a quick-maturing Japanese seed that had never been tried here. It proved a great mistake, as the Japanese rice did not produce 20 per cent as much as the

We have fully tried the native's plan of setting rice, having put in several hundred acres in this way. We find that \$1, gold, will take up the plants and transplant an acre. We also have several hundred acres seeded in the American way, which are in every way promising. The transplanting enables us to lengthen the planting season by six weeks.

The rice farm has about 25 horses and mules for doing its work, besides some breeding mares and ponies. It is found that horses and mules can stand work here fully as well as in the Southern States of America. With us, 4 mules and 1 native teamster break 4 acres of land a day. With the native farmer 1 man and 2 carabaos break 1 acre in five days. The reason for having 2 carabaos is that a carabao must spend half the time wallowing in mud and water, and, hence, 2 must be had so as to change every hour or two. The native plow is a small affair cutting about 4½ inches.

So the native's weak point and great waste



PHILIPPINE METHOD OF THRASHING RICE, GOVERNMENT RICE FARM, MURCIA.

Edwards. Several machines have been completed and others are in course of construction, but as Mr. Edwards has made no report of the result of trial tests of the completed machines it may be inferred that their success is still to be determined. The Bureau has imported a maguey-extracting machine and several cotton-gins, which latter are being operated in Manila, Batangas, and Ilocos Norte. The Bureau has also imported a tree cotton-cleaning machine, and investigation is now being carried on with a view to securing machinery for the extraction and cleaning of coir (cocoanut fiber).

Probably at this time greatest public interest centers in the experimental work which the Government has been doing on its immense rice farm at Murcia, Tarlac Province, Luzon, where the industry has been carried on according to modern methods and with modern machinery. Mr. Welborn has this to say about what was accomplished during the period covered by his report:

RICE FARM AT MURCIA.—This farm is poorer than most of the rice lands of the Islands, and is not as level as it should be

regular Filipino dry-season rice, called by the natives "inita." This native rice is a strong, vigorous grower, strong enough to fight its way among tropical grasses, and is in every way better than the Japanese kind tried.

TRANSPLANTING RICE.—The natives universally start their rice in seed beds in June and July; they prepare their land as fast as they can, by plowing and harrowing in mud until the middle of October, and as fast as they get a piece clean, set the young rice about 9 by 9 inches. This plan is well-nigh universal in oriental countries. The reason for this plan, no doubt grew out of the fact that, by setting rice 6 weeks old and 10 inches high in freshly cleaned land, it more easily keeps the mastery over the noxious grasses and weeds. Then, with rice of such height, irrigation water can be put on the land much earlier and deeper, and thus keep the weeds and grass down. With the slow and faulty way of preparing the land practiced in the island, it is quite likely that rice seeded in the American way at the beginning of the wet season would make but little crop.

of time is not in the transplanting of rice—there are women and children enough to plant the whole Islands—but it is in the ridiculously slow method of preparing the land.

With some Chinese oxen with which we have been experimenting, four oxen and a native plowman have been able to plow 2½ acres a day. These oxen can work ten hours a day without suffering from heat. We have tried them in the mud and they appear to do as well as carabaos. These cattle can do so much more work than carabaos that with them there will be less necessity for plowing in mud, as so much more of the work can be done before the land gets muddy. The oxen seem to resist disease much better than carabaos, and get their living from grazing almost as well.

LABOR.—Labor about Murcia is abundant and cheap. Natives work for a fraction over 30 cents, gold, a day and board themselves. They have proved good teamsters, and do satisfactorily all of the more common kinds of work on the farm.

New buildings, ample for the needs of this farm, have lately been erected.



PHILIPPINE METHOD OF THRASHING RICE, GOVERNMENT RICE FARM, MURCIA.

About 35,000 bushels of rice were threshed for the public over an area of something like 125 square miles.

The people, in tramping out rice with their feet, or driving carabao over it as a means of threshing it, generally occupy the best part of three months in the work, and suffer losses of rice in waste, stealage, leakage, etc., of 25 per cent of the entire crop. They thresh the crop so slowly, in fact, that in many cases they eat it up as fast as they thresh it. Their methods of hulling and

cleaning are equally crude; the valuable by-products, as well as much of the rice, are wasted.

By threshing the crop by steam power, the rice becomes a marketable commodity at once. It may go to a rice mill that cleans it economically, and saves 20 or 21 per cent of the rough rice in bran and polish, which are excellent feedstuffs. By disposing of the crop quickly, the farmer and his laborers have time to put in other crops. Another short-season rice crop might be grown or,

what would be better, perhaps, a crop of velvet beans, peanuts, soy beans, cow-peas, or other crop which, besides yielding profitable returns, would also enrich the land for the main rice crop.

Several steam threshing outfits have either been ordered or are in contemplation. One curious trait of the Filipino seems to be that he is willing to buy what he has actually seen to be good. But one need not talk to him about any improvement or addition to what he has seen. He will believe none of it, and wants



THRASHING RICE WITH AMERICAN MACHINERY, GOVERNMENT RICE FARM, MURCIA.



WORK ON THE GOVERNMENT RICE FARM, MURCIA.

what he has seen demonstrated—no more and no less.

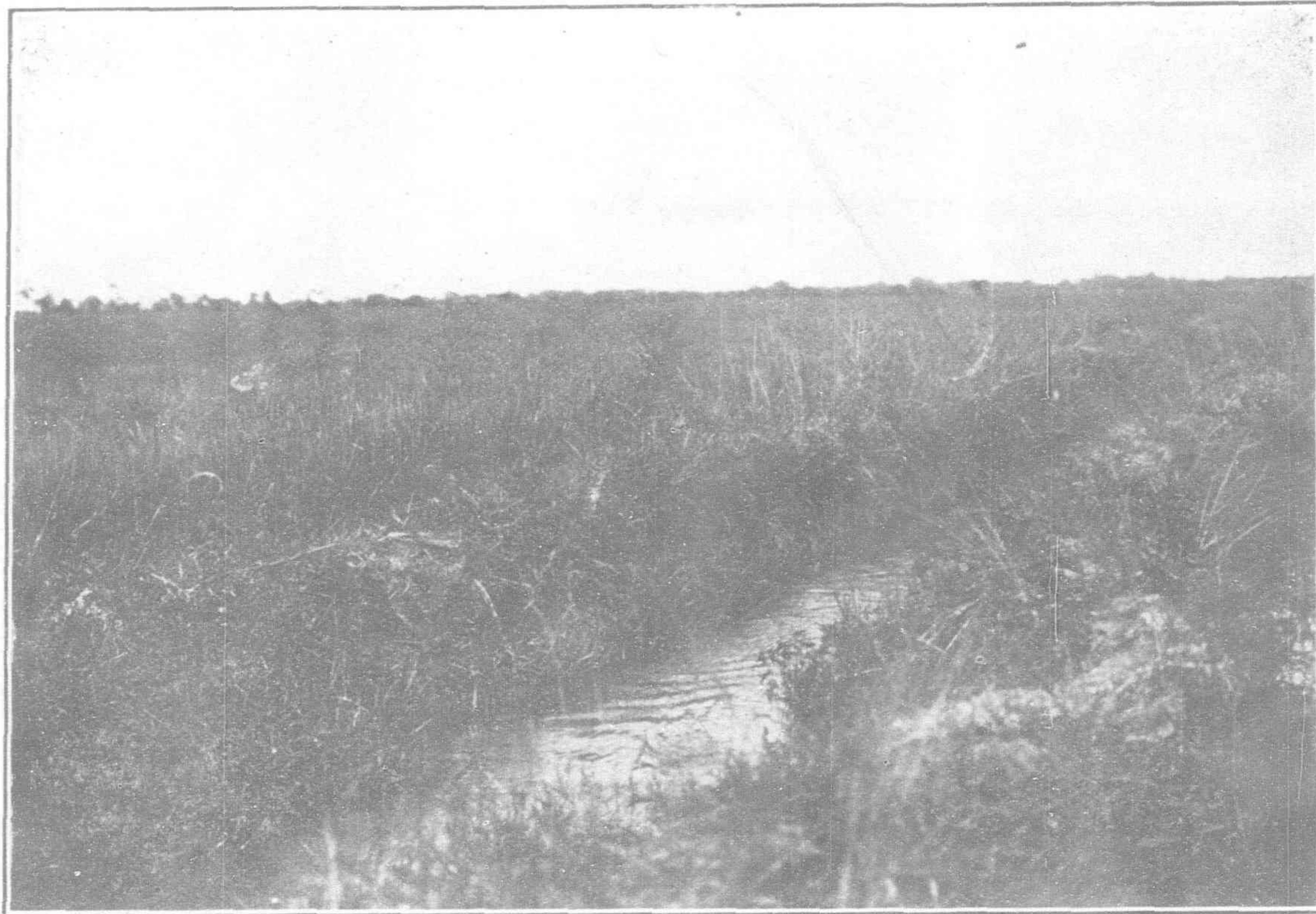
It is often charged that the Filipino will not work and, hence, will never develop the country. I believe he now expends enough energy (largely unprofitably spent, carrying heavy burdens long distances, tramping out rice, cleaning it in mortars, and doing all manner of hard work in the crudest way), to make the country a garden, if properly

directed. With steam thrashing and cleaning of the main crop of the country, a long step in the right direction will have been taken. I may state that the Hawaiian Islands produce 8,000 pounds of rough rice per acre per annum in two crops. There are lands in these Islands, I am reliably informed, that sometimes produce 4,000 pounds per acre in the single crop grown—i. e., 100 cavans (about 10,000 pounds) per hectare (about $2\frac{1}{2}$ acres).

With a steam plow and the animals now on the farm, I should like to have 3,000 acres of this land. With a yield of only 1 ton per acre—half the estimate of the single crop as above—\$60,000, gold, outturn would result. Rough rice probably can not be worth less than \$20 to \$24, gold, per ton, until the \$12,000,000 worth now imported shall be supplied by home production. Having found considerable market in Manila for rice straw at \$10, gold, per ton,



NATIVE METHOD OF TRANSPLANTING RICE, GOVERNMENT RICE FARM, MURCIA.



IRRIGATING RICE ON THE GOVERNMENT RICE FARM, MURCIA.

the Bureau now has at Murcia a first-class straw baler. As it costs about \$3 a ton to bale and ship it to Manila, we expect to add at least \$5, gold, net to the outturn of each acre of rice harvested.

THRASHING.—Mr. Zalmon K. Taylor, Machinery Expert, in charge of thrashing, makes the following report to his chief relative to the thrashing of palay at the rice farm and in other parts of Tarlac Province:

From January 12 to March 12, 1904, there were thrashed 17,778 cavans of palay, 1,918

cavans being received as toll to defray expenses of operating the machine. These expenses include skilled and native labor, board for the latter, fuel, oil, etc., amounting to \$1,400, United States currency. At present prices, the toll collected will pay all expenses and leave a surplus of \$500 for wear of machinery.

The class of work performed by the thrasher was such that the native farmers quickly saw the advantage gained by thrashing with a modern machine over their old method of

thrashing with horses and carabaos. Hundreds came from other provinces to see the work we were doing, and went away convinced of the merits of the machine. Many reports were circulated claiming there was a devil in the machine, and that palay thrashed with the machine would not grow. Others said that we had a deposito, and would take 16 cavans during the day and at night we would haul it away. We convinced them by fair dealing that these stories were false.

The native farmer is very quick to see any-



GROWING RICE ON THE GOVERNMENT RICE FARM, MURCIA.

thing when it benefits him. Two farmers bought a thrasher and have contracted for another, to be delivered for the next thrashing season. One is to be used in Tarlac Province and the other in Pampanga Province. Many expressed their intention of increasing their acreage next season.

The native laborers employed upon the thrasher were very efficient, working ten hours per day, and doing work which was much heavier than any that they were accustomed to do. The thrasher covered about 125 miles in all, from starting to finishing point, although the place where it finally finished thrashing was only about 25 miles from the place where the work began. In the majority of cases we made our own roads, crossing creeks, ditches, rice fields, and hills, and even making our way through the bosque with the machine. The thrasher was taken over almost impassable roads with very little trouble, showing that it is practicable to take the machine over almost any part of the country.

There was a very fair crop of palay in this section, as the farmers do not depend entirely upon the rainfall, but, in the event of drought,

borough of \$4,500, United States currency, and that same be sent to the Government rice farm, where this machinery will prove a very valuable addition to the machinery already there, and where its usefulness can be demonstrated to the farmers of Tarlac and other provinces.

CONSERVANCY OF THE HUANGPU

The Diplomatic Corps at Peking has finally approved the Huangpu Conservancy Scheme, Shanghai, and it seems to be a foregone conclusion that the Chinese Government will also sanction it, as the improvement is known to be in accordance with the view of the Nanking Vice-roy. The great objection that the successive Viceroys of Nanking had to the scheme was that under the Protocol upon which it was originally based, control of the Huangpu was virtually taken out of their hands, and put into the hands of a foreign commission, while the new scheme leaves the entire control in the hands of the Taotai and Commissioner of Customs for the time being. This is provided in Article I, which also provides that no change shall be made in the present arrange-

as long established rights in the matter of berths and buoys, though what is contemplated is the establishment of a system of public moorings in place of the present fixed berthing-places. The delicate question of the expropriation of land required for the carrying out of the improvement of the river, and the ownership of accreted land in front of the property of existing riparian owners, are treated in Article VIII. The price of any land that may be expropriated, and the price of new land made by the regulation of the banks of the river, will be determined by a commission consisting of one person selected by the Consul of the landowner affected, one person selected by the Doyen of the Consular Body and one person selected by the new conservancy authority. If the Doyen of the Consular Body is also the Consul of the landowner affected, the second member of the commission will be selected by the Consul next in seniority to the Doyen. "The Consul having jurisdiction over the party interested will give effect to the execution of the commission's decision." Riparian owners will have the first right to buy land accreted in front of their properties



CHINESE CATTLE DRAWING A GANG PLOW, GOVERNMENT RICE FARM, MURCIA.

bring water through ditches from the rivers. The best palay came from fields which had been irrigated. In many places Japanese rice was planted in December, January, and February and is now looking well. This makes two crops per year from the same field. The land is fast coming under cultivation again.

On account of dearth of work animals, many inquiries were made concerning steam plowing. Many farmers spoke of forming societies to raise sufficient funds to purchase steam plows. The engine could be used both for running the thrashing machine and for the sugar mill. But they first wish to see a steam plow in successful operation. In this section of the country fuel will cost about \$1 per day for an engine. By using a steam plow the acreage can be increased very rapidly, and it is perfectly feasible to operate a steam plow on this soil.

I respectfully recommend the purchase of a steam plow, consisting of a 35-horsepower engine and one 6 or 7 gang plow and harrows, the cost of which will be in the neigh-

ments with regard to river police and quarantine work, lighting and buoying, pilot service, etc. All this work is done by the Customs at present. Article II provides that within three months the Chinese shall appoint an expert engineer to undertake the contemplated improvement of the Huangpu. In Mr. de Rijke, who has studied and knows the question thoroughly, the Chinese have at hand the man they want. Article III provides that all contracts for work, material, etc., shall be put to public tender; while Article IV stipulates that a quarterly report shall be made to the Consular Body here of work done and money expended. Articles V, VI and VII abolish vested interests in berths and buoys, etc., in the river, placing the whole control in the hands of the Taotai and Commissioner of Customs, who are also given authority to do dredging work in the river. This puts the whole management of the river from bank to bank in the hands of the new Conservancy, the buoys, the pontoons, the opium hulks, etc. We may safely presume that there will be no arbitrary interference with what are regarded

Article IX provides that the whole cost of the new scheme shall be borne by the Chinese Government, without any contributions from riparian owners, trade, or navigation. Article X specifies the sum to be devoted to the work, Hk. Tls. 460,000 a year for twenty years, and the sources from which the sum is to be derived, the entire rights on the opium collection of Szechuan and Soochow. China may, if necessary, raise loans for the prosecution of the work on this security; and if these sources are insufficient, China must furnish others. Article XI empowers the Consular Body to see that the work is proceeded with diligently, carefully, and economically, and may, if necessary, insist on the dismissal of the engineer and the selection of another one, the Diplomatic Body being the referee in case of the refusal of the Conservancy authority to act on the representations of the Consular Body; while Article XII holds over the Chinese Government the threat of a reversion to the impracticable Annex 17 of the Protocol of 1901, if this new scheme is not faithfully carried out.

"A ROAD TO PENANG."

At the first meeting of the Engineering Society of Siam at which a paper was read, held recently in Bangkok, Mr. Aage Westenholz, C. E., who has the honorable distinction of being the first President of the organization, read a very able and interesting as well as instructive paper, entitled, "A Road to Penang." The paper is as follows:

"The subject I propose to discuss is a road connecting Bangkok with Penang—that is to say between Petchaburi and Penang—sufficiently good to be used by fast motor-cars: chiefly with a view to quicken postal communication between Bangkok and Europe. Such a road would be extremely useful for other purposes, but it would be a waste of time to stand up in such a Society to prove that roads are useful. Ever since the time of the Romans it has been known that good roads are essential to the civilization and development of a country, unless something equally good is provided in railways or waterways. The provinces on the way to Penang are sufficiently rich in resources to justify the construction, not of one road, but of many; and the Siamese Government will be able to see the great advantages to the administration in bringing these provinces within a day or two from Bangkok. But it is specially desirable that this road should be built first of all.

Such a road would shorten the way of the mail between Europe and Bangkok by about five days. Bangkok now suffers under the disadvantage of being, with one or two exceptions, more hopelessly distant from Europe and America than any other places of similar importance outside Australia. A letter from London takes to reach Calcutta 20 days; Cape of Good Hope, 18 days; Buenos Ayres, 25 days; and Vladivostok, 16 days. A letter to Bangkok, as is known, often takes over a month. Bangkok is at the end of the earth for a European. It would be interesting to inquire how much increase of income a man in Singapore would ask in return for coming to stay in Bangkok; and how much of this he would consider due to the extra distance from home.

Of course it is not only the foreigners who feel the inconvenience of a slow mail service; to every educated man in the country, papers and periodicals, if not letters, from abroad, are quite an important item in the amenities of life. But the question of private comfort is small compared with the business interests concerned. The imports and exports of Bangkok reach some 140,000,000 ticals per annum, and most of this trade is directly or indirectly affected by facilities of correspondence with Europe or America. To business men it would make a considerable difference if they could get a reply to their letters in 50 days instead of 60.

It is difficult to say to what percentage the trade of 140,000,000 ticals per annum would benefit by improved means of correspondence. But some gauge may be found in the subventions paid by other Governments for the quick despatch of their mails. The German subsidy for mails carried to the Far East and Australia amounts to nearly 5,000,000 ticals per annum—paid not for the transport of so many tons of paper, but for the fast transport of them. The value of each day of acceleration is reckoned by such a model Government as the German in hundreds of thousands.

The total German trade with Eastern Asia and Australia is about 350,000,000 ticals, while that of Bangkok with foreign countries is worth some 140,000,000 ticals. In the same proportion, then, Siam should spend 2,000,000 ticals on accelerating her mails. Even if we reckon that not all the subsidy is paid for fast mails, and that half of Siam's trade would not benefit by improved conditions of correspondence going West there would still be sufficient reason for Siam to spend a few hundred thousands if she followed the policy of Germany, which is also that of England and most other progressive nations.

Another indication of the importance of quick correspondence is afforded by the amount spent on telegrams. For the one advantage of quickness Bangkok spent last year on telegrams 320,000 ticals.

From Penang to Singapore mail steamers take about 36 hours. After arrival in Singapore letters sometimes get to Bangkok in less than four days, but they may also take seven or eight, the average being about five. It is these five days I think could be saved; the mail being got to Bangkok from Penang as quickly as it now gets to Singapore. I allow for transport of the mail from Penang to head of road on the mainland, three hours after arrival of steamer. The distance by the road to Petchaburi should be about 600 miles—divided into three sections of about 200 miles, each with its own motor-car. At a speed of 20 miles per hour each car would cover its section in 10 hours; and the exchange of the mail bags to the next car should be the affair of a moment. Thus the total distance of 600 miles could be covered in about 30 hours. At Petchaburi a special motor-trolley should be in waiting, capable of doing the 90 miles to Bangkok in four hours. Thus the time between Penang and Bangkok figures out at $3+30+4=37$ hours, or about the same time as to Singapore. And the motor is fast improving, much faster than an old invention like the steamship.

The expense on the road is the chief item. By the kindness of the Chief Engineer of the P. W. D., I have obtained sundry figures of the cost of several roads in the province of Puket. From these figures we estimated that a road 12 m. wide, with the middle part metalled 4 m. wide, would cost on the average Tcs 2,800 per mile, or, for 600 miles, 1,680,000 ticals—say, with a good margin for bridges, etc., 2,000,000 ticals. This figure may be considerably altered when more information is gathered and digested, and I hope members with special knowledge will let us have the benefit of it. But anyhow the expense will not be seriously felt by the national finances, as it consists almost entirely in local labor; and it is but fair that each district directly benefiting should contribute its share. This has been the practice in the making of the existing roads in Malay Peninsula, and some of these are all that could be desired. The interest on 2,000,000 ticals at 6 per cent per annum is ticals 420,000. The cost of yearly maintenance may be anything from 50 to 500 ticals per mile, say from 30,000 to 300,000 ticals for the whole. But I should say 300,000 ticals per annum—nearly all supplied in labor by those most interested—would be the total yearly sacrifice to Siam, in return for which these valuable provinces would be developed and firmly bound to the Metropolis. The cost of a railway would probably be about 50,000,000 ticals. We all hope a railway will come in time; but it is a considerably larger order; and when it comes it will not make the road superfluous.

Next we come to the cost of the motor-car service. The mails may weigh up to 500 or 600 kgs. and a 30-horse power motor-car would be able to take this weight 200 miles in 10 hours. Three cars would, therefore, be enough for the usual service, and two should be held in reserve—altogether 5 motor-cars, which, I believe, we could have specially built and delivered at Penang, for 100,000 ticals, including spare parts. A reliable motor trolley to run on the Petchaburi railway would cost some 10,000 ticals; on workshop, tools, sheds, etc., I would spend another 10,000; making a total of 120,000 ticals, first cost.

The working expenses, from what I have been able to gather would be about one tical per mile. Taking the distance from Penang to Bangkok as 700 miles and reckoning on one round trip per week, or a little over 70,000 miles per annum, we get a yearly expense of 70,000 ticals. Add interest on first cost at 6 per cent per annum and we get say, 80,000 ticals per annum as the total cost of the car service.

The road and cars would be used for many other purposes of business and pleasure. Take travelling facilities to and from Europe. If we invest the same capital in cars fit to take passengers, it need only four passengers a week each way, at 200 ticals each, to pay

expenses and a fair interest on the capital. If we charge the passengers a little more, say, 250 ticals for the extra gain in time, etc., the lucky undertakers of this passenger service would pay a dividend of 25 per cent per annum. Very likely the mail service could be combined with the carrying of passengers, which might serve to cover part of the expense. My idea is this:—If the Siamese Government is ready to construct and maintain this road, the European community in Bangkok should step forward and offer to bear the expense of the motor traffic, i. e., of the Government to carry the royal mails between Penang and Bangkok free for the benefit of the Government and the rest of the community. The 80,000 ticals per annum may come out of a voluntary income tax of 1 or 2 per cent on our personal income, which I reckon at an aggregate of some 4,000,000 ticals. It may come out of an exceedingly small percentage tax on our businesses, aggregating 20 or 30 times that amount. But the easiest way would be to obtain it simply by voluntary subscription from the big firms and from individuals. The European community of Bangkok has never been backward in subscription for public purposes. But before we ask its opinion on this, let us have the question thrashed out to the very best of our ability. I put it to all of you to contribute. If the scheme is carried through it will be no small honor for our Society to have been connected with it."—(Bangkok Mines).

CANALS IN CHINA.

There are some features of the canal system of China, reports the American Consul at Hangchow, especially of the Imperial or Grand Canal, which can be studied with profit by the people of the United States. One of these is the use of the canal for the production of food in addition to its uses as a means of transportation. Allied to this is the use of the muck which gathers at the bottom of the waterway for fertilization. Another is the use of every particle of plant life growing in and around the canal for various purposes. The Chinese secure a vast quantity of food of one sort or another from their canals. However the water is supplied to the rice, it is evident that there must be a waterway leading to the field and back to a principal stream, which is generally a branch canal. These waterways naturally take up a considerable portion of the land, and the Chinese make as profitable use of them as of the land itself. The first use of the waterways is for fishing. The quantity of fish taken from the canals of China annually is immense. Along the canals in China at any time may be found boatmen gathering muck from the bottom of the canal, and as soon as the boatman has a load, he will proceed to some neighboring farm and empty the muck, either directly on his fields—especially around the mulberry trees, which are raised for the silk worms—or in a pool, where it is taken later to the fields. From this muck the Chinese farmer will generally secure enough shellfish to pay him for his work, and the fertilizer is clear gain. The fertilizer thus secured is valuable. It is rich in nitrogen and potash, and has abundant humus elements. This dredging of the canals for fertilizers is the only way by which the Chinese have kept their canals in reasonable good condition for centuries. The fertilizer has paid for itself both ways. Recently there were complaints filed at Peking that the ashes from the steam launches plying on the canal were injuring the muck for fertilizing purposes, and the problem has been considered a serious one by the Chinese Government. Where there are so many canals there is more or less swamp ground. In China this is utilized for the raising of lotus roots and nuts. There are duck farms all along the canals in China. These are profitable. The coming of railroads will affect the canals somewhat, but not so much as may be imagined, for the railroads will very largely build up a trade of their own. A little money will make China's canal system in the future what it has been in the past, the greatest on earth.

THE KALLANG TUNNEL SCHEME

On the last day of March the contract held by the firm of Howarth Erskine, Limited, for the finishing of Kallang Tunnel, Singapore, was to have come to an end as stipulated in the agreement with the Municipality, but as was proposed by Mr. Broadrick at a recent meeting of the Municipal Commissioners of Singapore, there was granted an extension of time of one month—until April 30th—after which there will be an opportunity of “seeing what has been done,” according to *The Straits Budget*.

This elongation of the contract time can not avail much, of itself, says *Budget*. It will have to be renewed again and again until perhaps a year or more has been added, for even under the most favorable conditions, which simply spell dry weather, the task of cutting through the hill would hardly be possible of accomplishment in much less than six months. But after all one cannot cavil at the politic spirit which prompts the Municipality to grant renewals of short duration, for, by that means the contractors are impelled to increased continuous activity and the doubts and fears which foment in the minds of the public are more or less allayed by the consequential assumption that the authorities are doing their utmost to bring the work to a successful completion.

The Kallang Tunnel Scheme is a subject that one cannot approach except in a very gingerly fashion, so far as the work as it at present stands and those engaged upon it are concerned. And for this reason: that the contractors who have now taken the work in hand and the present Municipal Engineer are not responsible for the inception of the scheme but are simply endeavoring “to make the best of a bad job,” rash in conception, fostered in ignorance and incompetency. Unfortunately, the association of ideas betrays a great many people into the wrongful impression that everything and everybody in any way connected with Kallang are worthy only of anathema, forgetful of the fact that neither the engineer in whose brain the scheme took shape nor the contractors who so lightly undertook to carry out his project, replete with incertitude as it was, are any longer with us. They are not any more to be counted upon as factors in the case. Only their most unwelcome legacy remains behind—the legacy of an unfinished work, bristling with difficulties and stupendous in its magnitude. At any time it is a very ungrateful task to have to undertake the completion of a thing which another has begun; but immeasurably more trying is it to have to carry out a scheme such as the Kallang Tunnel which was opposed from the beginning by our best engineers in the Colony as a blunder and which in its mere infancy overtaxed the resources of the original contractors to the bursting point.

When the great impounding reservoir out there was formed, it became a desired object for the feeding of it to tap the lakes and valleys lying away to the northward, thus ensuring a plentiful supply of water for the Island. Hilly forest land intervened and separated the two catchments which it was sought to unite. By choosing a circuitous route the high lands could have been avoided and a practically level lade constructed. But those responsible elected to pursue a direct channel and incidentally to tunnel through the Kallang Hill. From an engineering point of view this would have been considered in ordinary circumstances anything but formidable. The distance to be tunneled was less than a quarter of a mile. To drive a 6-foot tunnel through the hill therefore was not regarded as hazardous in the slightest degree. Even if the hill had been of solid granite no professional compunction would have stood in the way of the undertaking in the absence of an alternative route.

Where such works are projected it is customary for borings to be made with a view to ascertain the constitution of the substrata but no such preliminary precaution appears to have been taken in this instance. And as

ill luck would have it, when the tunnelling was commenced the substratum of the ground at the level on which the brickwork of the tunnel had to be built was found to consist mainly of a deposit of soft and yielding mud—a sort of flowing mud river, full of springs—which filled up again as fast as it could be carried away and resisted all attempts at the ordinary methods of excavation. So the tunnelling process had to be abandoned, and it was decided to make a cutting right through the heart of the hill, very wide at the top and narrowing down at the bottom to the width of the tunnel itself. This method involved the removal of a vast quantity of earth, as may well be supposed. Nor did it, either, pan out as well as had been expected. The excavations proceeded merrily enough until the mud level was reached, but the more of this stuff that was taken out the more seemed to be in formation, for, as the workings were sunk to the required level, the sides of the hill—the hill itself indeed—settled down and forced the mud into the cutting; and as the more solid upper strata descended into the mud region they in turn became converted into a similar substance, their conversion being made easy by the presence of innumerable springs which defied all efforts at being led away.

To give an example. When a small section was successfully excavated by dint of unwearying and laborious toil the heavy cement blocks which form the base of the tunnel would be placed in position but it would not be long before the great pressure from beneath forced them up like so many blocks of wood. This happened several times.

When rain-storms came the whole of the cuttings were formed into veritable lakes which had all to be pumped out again and the work done afresh, while huge masses of earth slid down from the hill sides, hundreds of tons at a time, defying every obstacle and twisting the strongest timbering all out of shape. More than two weeks ago, there was an abnormally heavy fall of rain out there—something like six inches in seven hours nearly a twelfth of the total rainfall in Singapore. So much damage was done that it took almost a fortnight to make it good.

The building of the tunnel has been proceeding simultaneously from both ends, and of the total length of 1,300 feet about 600 feet have been completed. Those parts of the hill which have been cut open with a view to delve down to the invert, represent the smaller proportion of the work remaining to be done. The greater proportion—that which so far has not been dug deeply into the middle of the hill—is thought to be capable of tunnelling, and Mr. Walter Palliser (who is in personal superintendence of the works) intends to sink shafts and bore the tunnel in short sections.

At those parts where the original system is being followed of delving down to the invert bottom better progress is being made than could have been pointed to hitherto, putting aside the set-back caused by the heavy rains a fortnight ago. As the shifting mud is approached heavy piles are driven down to a point below the level requiring to be reached and as the mud is carried away and the excavations descend the sides are strutted with stout planks to resist the great pressure of the superincumbent hill. This system is giving satisfactory results. One great obstacle to solid progress being accomplished is, as has been stated already, the multitudinous springs that well up everywhere and percolate into the lowest part of the excavations. With a view to do away with this serious hindrance a shaft is being sunk higher up the hill so as to allow of the source of these springs being pumped out and kept dry; and if this is successfully done the rate of progress should be still further accelerated.

The great desideratum is dry weather. Given that, the tunnel might be finished in six months. When they begin to sink shafts and pierce the hill underground till the two ends of the tunnel meet in the middle, the rainfall will naturally cease to be factor of much consequence, and it is sincerely to be

hoped that this latest scheme for connecting the disjointed ends and completing the operations will prove effective. Mr. Palliser and his staff are throwing all their energies into the work and the one thing they are striving for, and deserve, is a speedy and successful termination of their herculean labors.

TRONOH MINES OF MALAYA.

A correspondent of the *Times of Malaya*, who has just visited the Tronoh Mines of Malaya, gives the following account of what he saw there: We entered the storeroom immediately after arrival. To one who is neither a mining expert nor inspector of mines, this storeroom tells a vivid story of what Tronoh really is. This department is a McAlister godown and a Riley-Hargreaves workshop rolled into one, and reproduced in miniature. There is everything the mine manager may want in moments of emergency. Pyramids of cement, shelf upon shelf of the minutiae of a mine, from a railway engine to a tin tack, from vast coils of rope to a packet of candles. After this one is not surprised to hear that close to the storeroom is a forge, brass foundry, and blacksmith shop. In this department between thirty and forty men are kept fully occupied. The company makes its own brass castings. In the storeroom is a great 16-inch Cornish pump—the largest in Malaya—capable of pumping 2,500,000 gallons of water per diem. This colossal adjunct to the mine will be erected in about three months—when the whole mine is to be electrified—and when it is once working there will be no further danger of a recurrence of the flood trouble. The management calculates that this pump will save the mine \$16,000 per month alone, an estimate which cannot fail to gladden the hearts of the shareholders. Close to this pump lies a “baby” locomotive, a *pukka* railway engine which is to be used for the haulage of firewood. The main plant is an unnecessarily imposing structure. The puddlers—which remind one of the mash tubs of breweries—are raised aloft on a wooden platform and the trucks are lifted from thehaft mouth by a curiously circuitous route. These arrangements, according to the manager, existed when the present company took over the mine, and sweeping alterations—with work going on day and night—were of course impossible. A policy of gradual improvement has been adopted. The puddlers at the main plant are four in number. They are worked by highly ingenious machinery, and it is now possible to stop one puddler without interfering with the work of the others. After being treated the stuff is dropped down below, and trucked away to the land chute, about 30 yards distant, and there finally washed. One gets an admirable view of the mine from the elevation of the puddling stage. The whole valley is seamed and scored with workings, the wide expanse alive with an army of miners, shafts rising here and there, and in one direction the earth is hollowed out into a huge valley 100 feet deep. It is an interesting scene, and an eye-opener to the visitor who has only seen the small roadside mines where Chinese are scratching the surface. On the hillside the manager's house is prettily perched, and near to it are the bungalows of the assistants. One of the most interesting parts of the mine was the manager's house. Mr. J. T. Rowe opened wide the gates of hospitality, and I found nectar and ambrosia awaiting us wherewith we drank “Success to Tronoh.” Breakfast and tin talk followed, our boring operations into the “makan” being eminently successful. For an appetizer there is nothing like a motor drive. Later I inspected the shafts, and the *lombong*, where Messrs. Aylesbury & Garland are working on contract. This *lombong* is the largest of its kind in the Peninsula, but, thanks to the Inspector of Mines, the sides have been judged to have an insufficient slope, and work has been considerably retarded. The slope is being altered. Near this *lombong* there are four other puddlers, which differ from those at the central stage in that they have a continuous discharge. The main shaft

at Tronoh is 150 feet deep and is sunk in the solid rock. As soon as the pumps are fixed the whole mine will be connected with this shaft. These two pumps will keep the entire mine dry, and the extraordinary number of pumps that now exists will be done away with. In one spot I found a hive of workmen busy with the foundations for the two new 50-h. p. boilers and engine to work the pumps. In about four months all these innovations will be completed, and the estimated saving runs into many thousands of dollars a month. It is a bold and busy brain that has thought out the new scheme for working the mine, but to talk to the manager is to feel confident that the enterprise will be brought to a successful issue.

DIAMONDIFEROUS GROUND IN BORNEO.

The facts about the discovery of diamondiferous ground in British North Borneo are slowly coming to light. A gentleman, whose name the Chairman of the British North Borneo's Court of Directors does not divulge, several months ago addressed the company, through its Secretary, as follows:

to Sandakan with me. However, when I returned to camp that night, I received instructions that I was wanted on the estate, and never had the fortune to return.

"You will find the blue clay on the hills behind the Van der Hoven Estate. I arrived at it by paddling up the river from Mr. Van der Hoven's house, say half-day, until I arrived in the village; from there went inland until I came to the hills mentioned, say 3 miles. The access is very easy, and anybody who has seen diamond ground will notice it at once—it sticks out in huge boulders as if thrown up by some eruption."

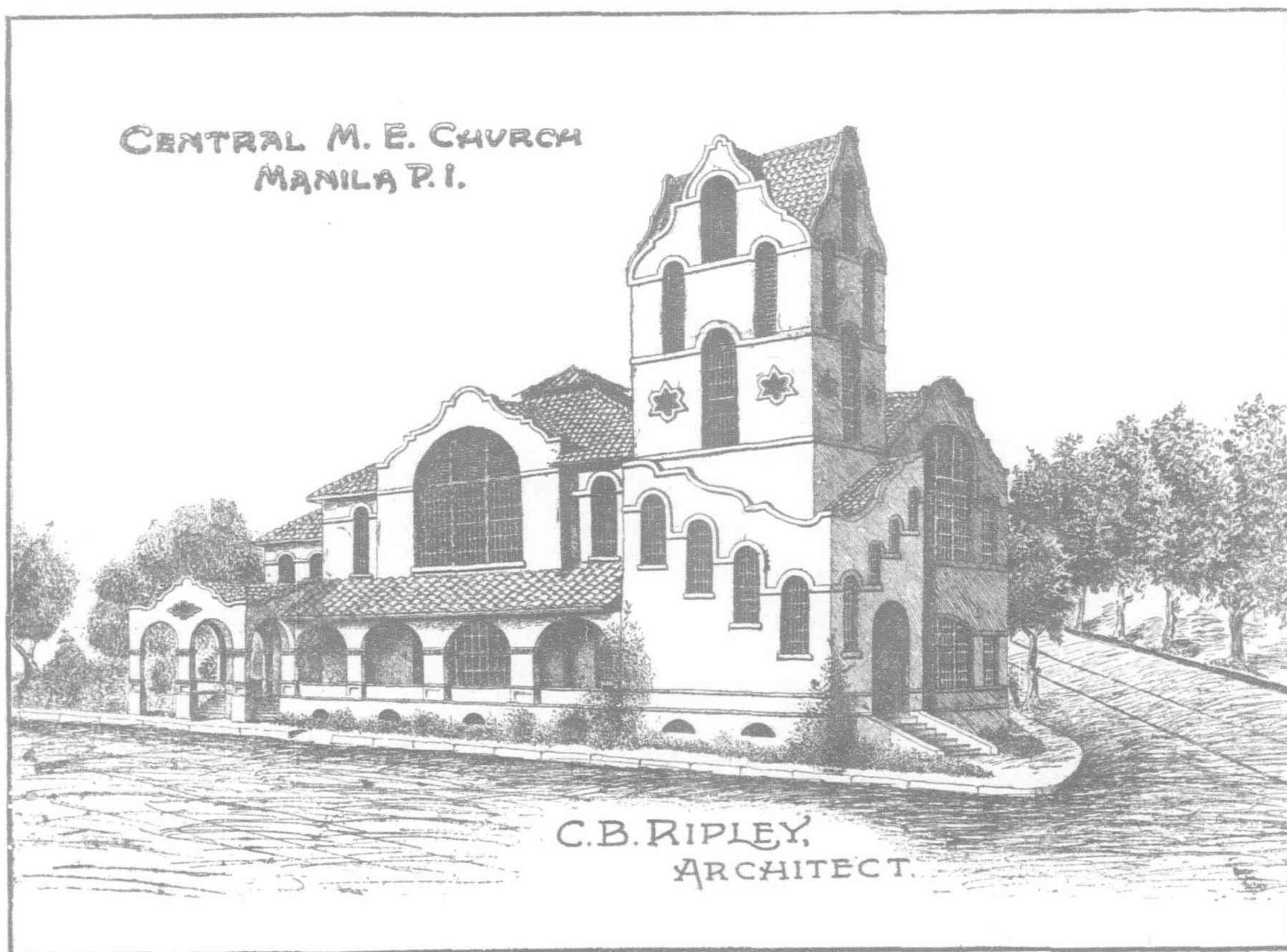
In this letter was a rough pen-and-ink plan of the Labuk River, showing the hills to which the writer referred as the diamondiferous ground.

After a personal interview with the gentleman who gave the information, the Managing Director of the British North Borneo Company, Mr. W. C. Cowie, who was very skeptical about the whole proposition, forwarded the letter and the plan to Borneo, with instructions to the Governor to send the officer of the Labuk District to visit and examine the place mentioned, and if the ground referred

cultivation of improved sugar cane this year is 915 *ko* and the crop is estimated at 7,097,467 *kin*. The area devoted to the cultivation of ordinary sugar cane is 23,936 *ko* and the output therefrom is estimated at 1,151,865,945 *kin*. This is an increase of 147,800,000 *kin* as compared with the present season.

NEW METHODIST CHURCH, MANILA

The Central Methodist Congregation of Manila, P. I., is about to erect a modern edifice of worship to take the place of the present temporary chapel. The new structure will be of concrete and steel with a metal tile roof. The style of architecture is in the Spanish Renaissance, which is so strongly entrenched in the Philippines that it seems especially adapted to church architecture in the Islands. The interior of the new structure will contain an auditorium with a seating capacity of from 300 to 500, according to the space required. On either side of this will be located a spacious parlor and social hall, and to the rear a semi-circular chapel which will be used for Sunday school and lecture purposes. There will be a library, trustees' room, pastor's



"Since leaving British North Borneo many years ago, some discoveries which I made are always flashing through my mind, and not knowing how to make use of them, may as well let the company have the benefit of them.

"I must mention that prior to going to Borneo, I was in the Kimberley Diamond Fields, South Africa, mining engineer to Mr. J. Wernher, now head of Messrs. Wernher & Beit, and with an eminent French engineer I many times discussed the probability of diamonds in certain latitudes in Borneo. After leaving Kimberley, and having fairly roved about China and the Native States, found myself in Borneo.

"On arriving I was engaged by Mr. Van der Hoven to survey his tobacco estate on the Labuk River, and it is there that I found the real diamondiferous ground; it is identical to the Kimberley blue clay with all the pieces of carbon and burnt garnets in it. After a good examination and taking a few pieces, I left with the full intention of taking a load

to was found, that a sample should be at once sent to London. That officer, Mr. Irving, had no difficulty in finding the out-crop from the plan, and the sample which was sent later to London, which latter has been pronounced by a London expert to be genuine "blue clay" and identical with that from which diamonds are extracted in South Africa.

The British North Borneo Company is at present arranging to make some further and extensive explorations of the "diamond belt."

SUGAR OUTPUT IN FORMOSA

It is estimated that the output of raw sugar in Formosa for the present season will be 1,074,974,929 *kin*. Calculating the loss of weight when refined at 25 per cent, the total production of refined sugar will be about 80,623,115 *kin*. The area of the plantations for the improved sugar cane has been greatly increased of late, and the actual output may be larger. The area of land devoted to the

study, kitchen, serving room, and space for a large pipe organ. The chapel will contain a number of class-rooms divided by folding partitions, throwing the whole room into one, for general exercises. On the south side will run an open veranda protecting the main building from sun and rain, and there will be extensive overhead ventilation in all weathers. The cost of the building is estimated to come within \$30,000, U. S. currency. A meeting of the building committee was held recently, at which it was voted to order at once a concrete block machine from the United States and to begin the work of construction as soon as it arrives.

BRIQUETTE-MAKING MACHINERY

The Japanese Government is erecting briquette-making machinery which will enable its naval vessels to consume Japan in place of Cardiff coal.

MINERAL WEALTH OF SIAM.

At this moment when Siam is shaping out a programme of general development and progress in creating new laws introducing various reforms, important schemes of public works, including sanitary and water systems, irrigation schemes and the extension and development of agriculture, defining the laws of land tenure, lease holding, which until now has been a fruitful source of quibbling, it may be interesting to say a word in passing on the mineral wealth of Siam of which very little is known, but which is bound to become a fruitful source of revenue to the Government later on. From time to time much surprise is expressed at the little attention that is paid to the exploitation and development of this vast source of wealth in Siam, and how is it that capitalists until now have done nothing towards this end?

There are several reasons why mining as an important industry in Siam has remained almost a dead letter. The principal cause may be attributed to the fact that the Government hitherto has taken little trouble to exploit the mineral riches of the land, and invite capital to carry on the enterprise. In fact it is only very rarely the subject is ever touched upon and then very little is said on the matter. The second reason is the great difficulties in the way of the would be investor, in obtaining the necessary permission to prospect, and, afterwards, securing the concession; while the third reason is the poor facilities existing in the way of means of communication which largely account for the non-success of many branches of business, as well as the difficulty of securing manual labor. It is not for these reasons, however, that such vast sources of wealth should be abandoned. It lies with the Government to remove some of the difficulties alluded to, and energy and enterprise will do the rest. We know of two mines which are being worked at present and the prospects for rich returns are highly satisfactory.

In Siam, gold, silver, copper, tin, iron and lead are found in rich deposits in many places. And the question has been frequently asked: Why does not the Mining Department arrange a proper geological map? Such a map would be of great value, and would convince capitalists of the vast subterranean treasures that still lie dormant awaiting the hand of energy and enterprise to turn them to account and add thus to the wealth and prosperity of the nation. Surely, the budget of Siam is large enough to permit of this study.

Several regions have already been prospected and most valuable indications have been obtained at Lopburi, Tien Touk Lom, Watana, Kabin, Ratburi, Bukanon, Korat, Ponkio and in several other districts in the Peninsula and at Bang-ta-pan. In the region of Petriew-Pachim one part is known to be prospected only in some points which extend up to the great mountains of Chantaboon passing by Moung Panat. The natives of that place are working the alluvium, which work, however, is only found relatively productive. The gold is sometimes found in nuggets of four or five ticals weight. Tin is also found there, but the work of developing the industry has not yet reached the preliminary stages, only some holes having been made by the natives. Kabin is the oldest known mine in Siam the working of which will again be undertaken on a larger scale than ever. Watana has large centres of rich strata. Sisophon is the great coming mine and already promises splendid results, from which the Government is likely to derive great benefit when the railway from Bangkok to Pachim, Wattana and Battambong, will be accomplished. The famous Khao Kam-peng (Pnom Dong Reck of Cambodia), is very little known, but, however, is very rich.

Coal also may be found in abundance, and, taking everything into consideration, it is a matter of surprise that the Siamese Government, in its endeavors to find new sources of revenue, does not attempt enterprising works of research into such matters, from which large benefits would be sure to accrue which would greatly help in pushing forward

sanitary, irrigation and railway schemes. Why not favor a society having for its object the study of such questions, as well as those of quarrying and procuring limestone, etc.? If these things can be found in Siam there is no need to have them brought from other countries. Those numerous calcareous mountains, ignored until now, could be turned into a rich source of revenue for the country. Hydraulic limestone, cement, etc., can be made here as elsewhere, and so can the iron mines be turned to account.

It is therefore greatly worth the while of the Siamese Government to take the trouble to show forth the richness of the soil in mineral wealth, as well as its fertility for agricultural purposes. Numerous societies have been formed in Bangkok during recent years, the latest being an Engineering Society embracing all branches of the profession, having as members electric, mechanic, hydraulic, irrigation, mining and architectural engineers. By encouraging frequent meeting of such a body of men the Siamese Government could very easily obtain much valuable information concerning the foregoing subjects while publishing some as a means of inducing capitalists to invest in such highly promising enterprises, thus adding in a great measure to the revenues and riches of the country, and to the prosperity of the inhabitants.—*Siam Free Press.*

THERMIT WELD IN AUSTRALIA

The largest thermit weld yet attempted in Australia took place recently at one of the docks of the Mort Dock and Engineering Company, Limited, Sydney, N. S. W., recently. The material operated upon was the base of a steamer's rudder frame, in which there were three cracks. A mould was built around these, and above it was erected a special crucible containing about 11 or 12 cwt. of thermit. On the thermit being ignited a heat of such intensity was created that in less than a minute the mass was molten metal, which, following down into the mould, formed a successful weld. This system has been in use for some time on the Sydney Tramways, where the welding of rails in the open has been carried on.

GRANITE AND FIRE CLAY, SIAM

The great mountains of Lopburi, Prabat, Siam, which, following a very irregular course, extend up to Lom with ramifications towards the Blue Mountains (Poukio), are reported to be of a calcareous formation with granite and sandstone towards Pon Vieng and Poukio. This granite is of a splendid quality and appearance, and can be broken off in huge blocks with great facility. They would suit admirably for piers, pillars of bridges, the construction of houses and other buildings, paving purposes, etc. The calcareous formation, which contains a portion of fire-clay of from 1 to 30 per cent, could be turned into a very lucrative industry.

PHILIPPINE CUSTOMS REFUNDS

By a recent decision of the United States Supreme Court at Washington, in the case of Messrs. Warner, Barnes & Co. *versus* the United States Government, in which judgment was given for plaintiff, not less than \$5,000,000 (gold) will be returned to Manila firms, representing Customs duties collected by the Federal Government during a period of nearly three years in which "war" prevailed in the Philippines. More than a score of firms have filed, or will file at once, claims for amounts ranging from \$5000 to \$500,000 (gold) each, to recover amounts of duties paid between April 11th, 1899, and March 8th, 1902. The sum involved in the suit of Messrs. Warner, Barnes & Co., through the test of which case all other interested firms will benefit, was \$98,000 gold. The decision in question establishes a precedent by which all future cases of a similar nature will be decided. Among the other firms benefited are Smith, Bell & Co., Kerr & Co., Macleod & Co., American Commercial Company, Compañia General de Tabacos de Filipinas, Ynchausti & Co., Castle Bros.-Wolf &

Sons, Lutz & Co., La Extremera, Estrella del Norte, Siglo XX, Sackermann Senior, Behn, Meyer & Co., Findlay & Co., E. C. McCullough & Co., American Hardware and Plumbing Company, Macondray & Co., Juan V. Gomez, Gutierrez Hermanos, H. W. Peabody & Co., W. E. Stevenson & Co., Holliday, Wise & Co., Kuenzle & Streiff, Heinszen & Co., Rueda Hermanos, San Miguel Brewery, Erlanger & Galinger, I. Beck, Francisco Reyes, Pons & Co., and others.

BIG CEMENT CONTRACT

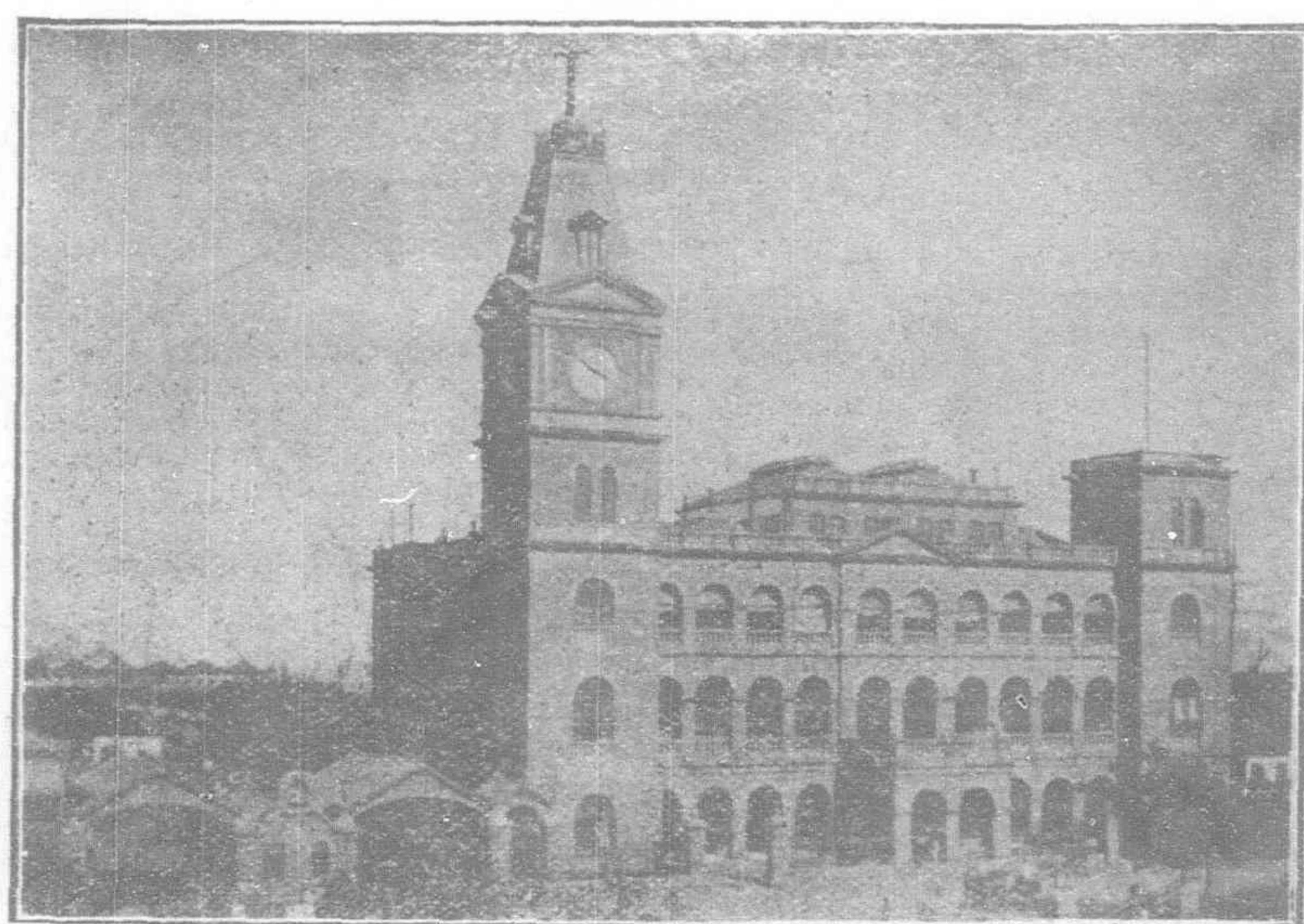
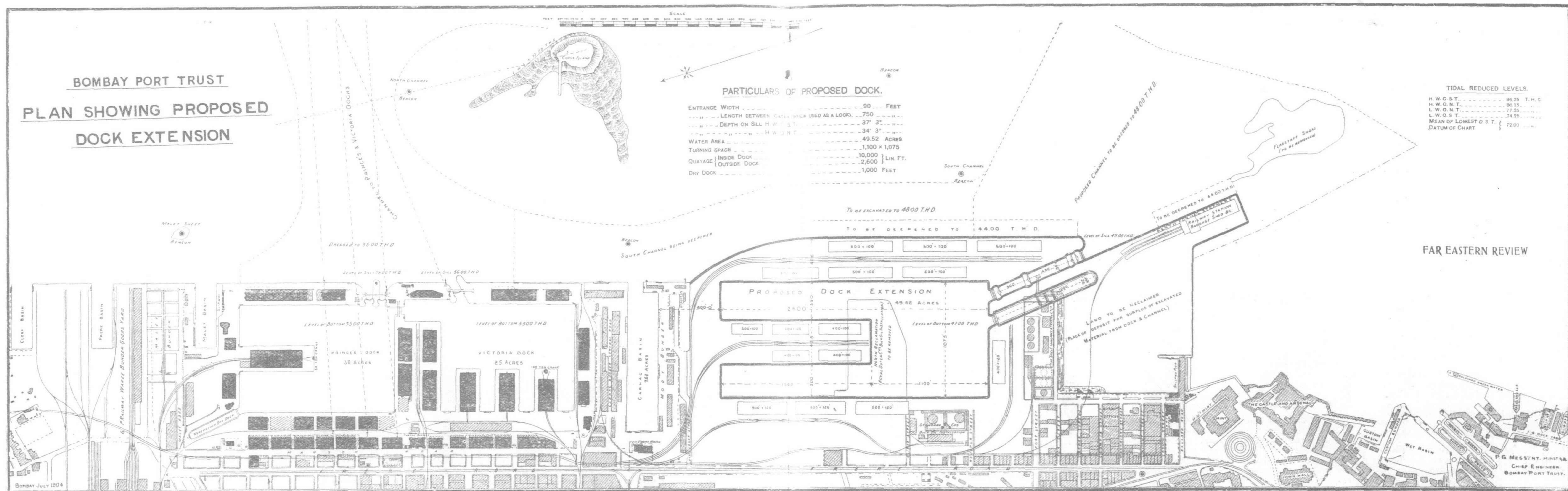
The Mitsui Bussan Kaisha was the lowest bidder on a call by the Government for 30,000 barrels of cement for use on various public improvements throughout the Philippine Islands. The bids were opened recently in the office of the Insular Purchasing Agent, and were as follows: Mitsui Bussan Kaisha, "Onodo," -P-3.90 per barrel; Messrs. Wm. H. Anderson & Co., "Green Island," -P-3.998; Messrs. Behn, Meyer & Co., "Hemmor," -P-4.20; Messrs. Castle Bros.-Wolf & Sons, "Hercules," -P-4.40; same firm, "Germania," -P-4.46; same firm, "Cannon," -P-4.48; Messrs. Findlay & Co., "Alsen," -P-4.72; Messrs. Holliday, Wise & Co., "Saturn," -P-4.83; Messrs. H. W. Peabody & Co., "Atlas," -P-5.42; Messrs. Holliday, Wise & Co., "Hemmor," -P-5.70; Messrs. Castle Bros.-Wolf & Sons, "Giant," -P-5.94; California-Manila Lumber Commercial Company, "Standard," -P-6. The offer of the Mitsui Bussan Kaisha was 64 cents per barrel less than the German bid on the "Alsen" brand that secured previously the contract for furnishing 30,000 barrels of cement for the harbor improvement at Cebu, P. I. The bids called for in this latter case provided that the seller should pay the duty, amounting to 15 cents, Philippine currency, per barrel, and for shipside delivery in the harbor at Cebu. On the contract mentioned above the successful bidder gets free entry for the cement and shipside delivery in Manila Bay. This contract calls for a delivery of 5000 barrels per month.

TONKIN-HONGAY BRIQUETTES

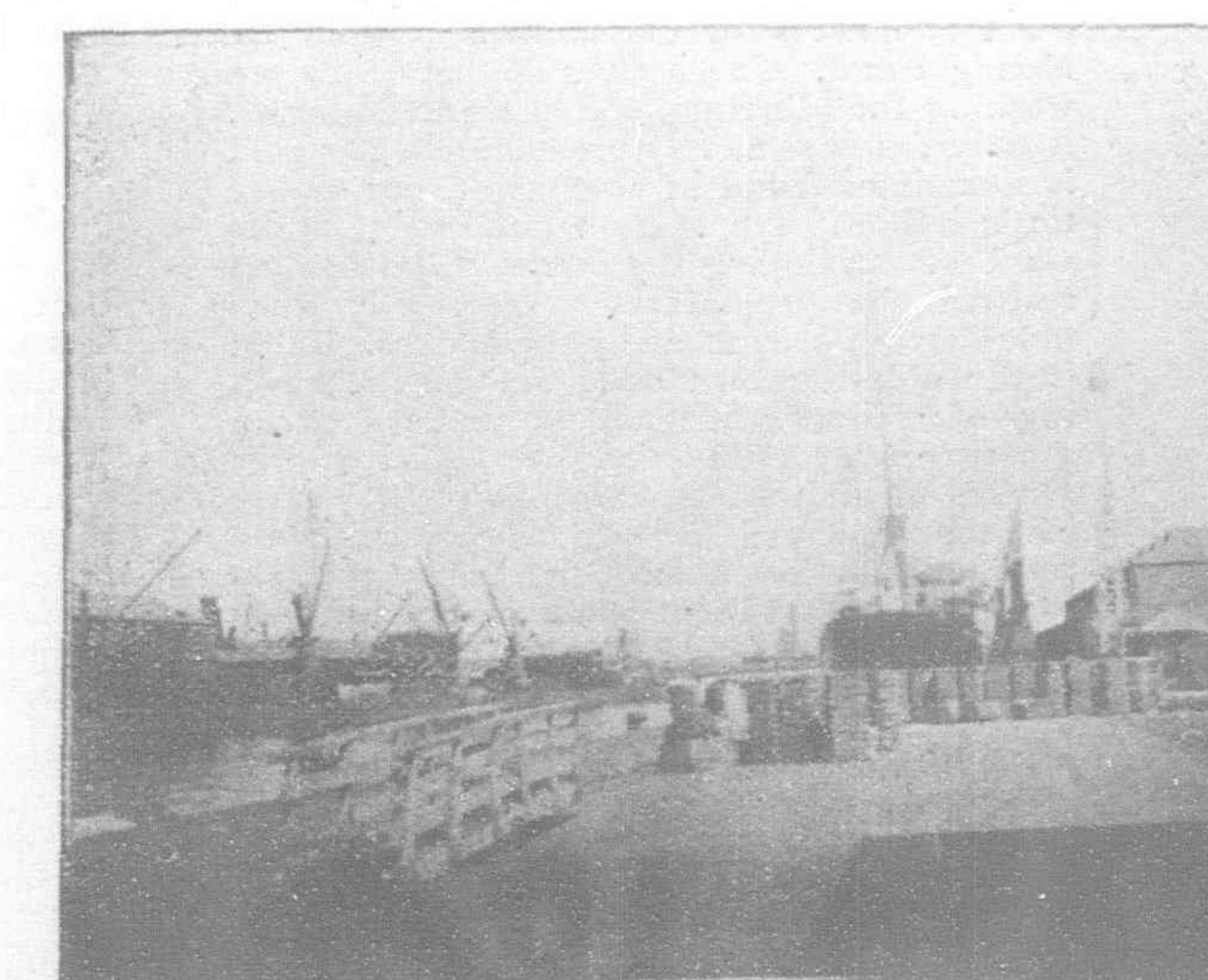
One of the important products of the Société Française des Charbonnages du Tonkin is known by the name of "Briquettes of Hongay." The port of Hongay is situated in the Bay of Along, now brought into prominence by the stranding of the cruiser *Sully* on a reef just off the shore. All the mines of the Company, now working, are connected by rail with Hongay port, thus affording cheap and quick shipment of the briquettes which should find a ready sale in Hongkong. They practically give no smoke, and burn well, not only in Belleville, Neclausse and other water tube boilers, but also in boilers with smoke tubes. Each briquette weighs about 5½ to 6 kilogrammes, equal to from 12 to 13 lbs., and measures 260 x 160 x 110 m/m, equal to 10½ x 6 x 4½ inches; the cohesion is very great. The power of evaporation, or heating value, when used for marine boilers is about 90 to 95 per cent of that of the best Welsh coal. At the Saigon Arsenal, in Saigon (Cochin-China), an evaporation of 8 ko. 3 of water per kilogramme of briquettes, or 8 lbs. water per lb. fuel, was obtained, an excellent result. Since the year 1897, the French Naval Division in the East, the Messageries Maritimes steamers, etc., use these briquettes for their boilers. Messrs. Jardine, Matheson & Co. are the Hongkong agents of the Société Française des Charbonnages du Tonkin.

SUGAR REFINING IN JAPAN

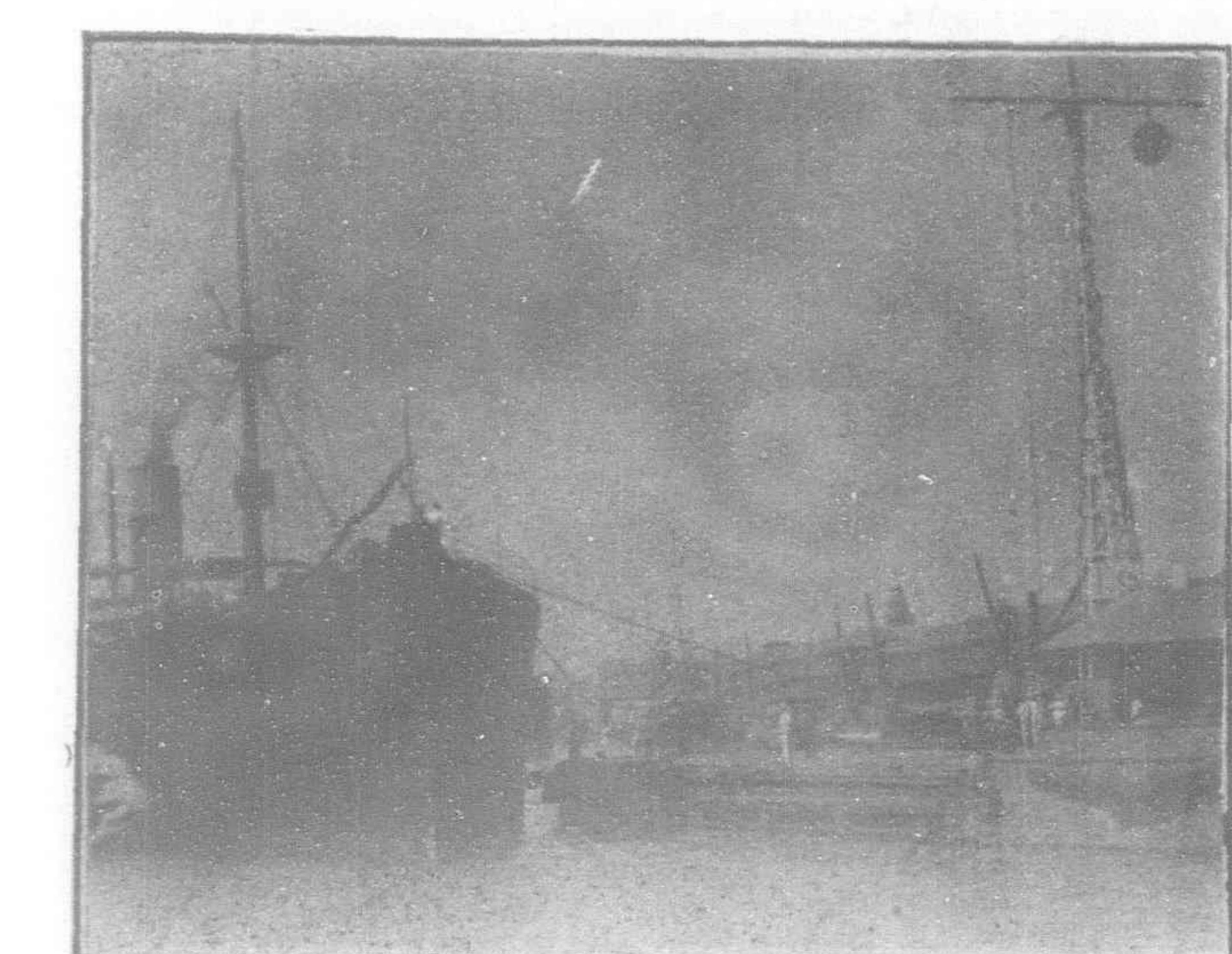
Sugar refining is a very profitable business in Japan at present. The Japan Sugar Refining Company, for instance, has just decided, at a general meeting of shareholders, that the sum of 51,300 yen is to be distributed as a bonus among employees, 266,000 yen are to be added to the reserve fund, 114,600 yen to be paid out as a first dividend to the shareholders at the rate of 15 per cent, and 47,200 yen are to be paid in the second dividend at the rate of 5 per cent, leaving 18,233,784 yen to be carried forward.



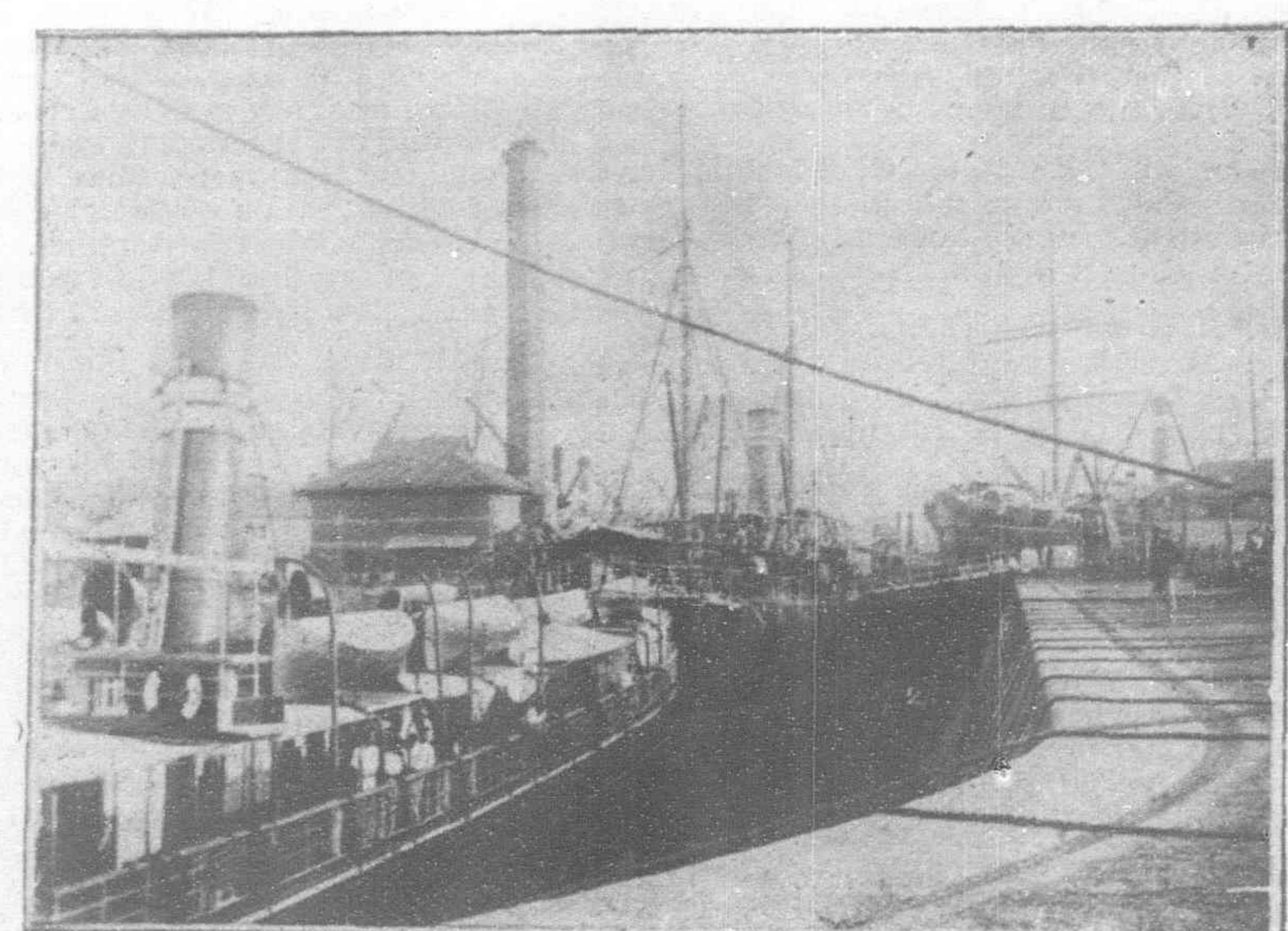
THE DOCK OFFICES.



VIEW IN THE VICTORIA DOCK.



VICTORIA DOCK GATES.



THE MERWEWEATHER DRYDOCK.

FAR EASTERN ENGINEERING AND CONSTRUCTION

PERSONAL

Mr. Stoner has been appointed Consul-General for the United States in Calcutta.

Mr. R. S. Gundry, C. B., is the new President of the China Association for 1905-06.

Mr. W. R. D. Bechett, British Consul at Bangkok, has sailed for England on leave of absence.

M. Louis Dossogne, Belgium Minister Resident at Bangkok, has returned home on leave of absence.

Mr. Walter Henry has been appointed an Assistant Engineer in the Public Works Department, Selangor.

Mr. F. W. R. Ward has been transferred from Yokohama to Messrs. Findlay, Richardson & Co's Manila branch.

Mr. C. G. May, Superintendent of Works and Surveys, Singapore, has entered upon a leave of absence of one year's duration.

During the absence on leave of Mr. H. B. Huddleston, Traffic Manager of the Burma Railways, Mr. N. M. Carnell is officiating.

Mr. Alexander Cook is acting as Governor of British North Borneo during the absence of Mr. E. P. Gueritz, on account of ill-health.

Mr. P. J. Burgess, Government Analyst at Singapore, has sailed for England to study the question of preparing rubber for the market.

Mr. D. G. Campbell, Acting British Resident at Selangor, is also acting as Commissioner of Lands and Mines of the Federated Malay States.

Mr. Bevis, Manager of the Hongkong and Shanghai Bank, at Shanghai, who has been seriously ill in Hongkong, is now convalescent.

The resignation is announced of Baron Shibusawa, Chairman of the Tokyo (Japan) Chamber of Commerce, as a result of ill-health.

Mr. William Martin, American Consul at Nanking, has been transferred to Hankow to take up the post of Consul-General there.

Mr. W. Wilson, Manager of the Kowloon establishment of the Hongkong and Whampoa Dock Company, has returned to his duties from leave.

Mr. Hunter Sharp, American Deputy-Consul at Kobe, Japan, had been promoted to the office of Consul at the same port, *vice* the late Mr. Samuel S. Lyon.

Messrs. Moll, Kunzli & Co., of Manila, have been appointed sole agents in the Philippines for the railway supply house of Messrs. Orenstein & Koppel Berlin.

Mr. Kayemon Takashima, Director of the Tokyo Street Railway Company, has resigned his post on account of ill-health, and has been succeeded by Mr. Keijiro Amenomiya.

Mr. Conger retired from his post as American Minister at Peking on April 1st, and, accompanied by Mrs. Conger, has departed to take up his new post as American Ambassador to Mexico.

Mr. C. G. Warnford Lock has retired from the management of the Raub Australian Gold Mining Company, Federated Malay States, and gone to Europe. He is succeeded by Mr. W. H. Martin.

Mr. W. C. Bridger, for five years in the service of Messrs. Butterfield & Swire, Hongkong, has transferred to Sandakan where he has assumed the duties of Resident Engineer for the British North Borneo Company.

Mr. H. G. White, representative of the Rahtjen Composition Company, at Singapore, has been transferred to Japan much to the regret of the people of Singapore. His successor at the latter place is Mr. J. W. Wilson.

Mr. Nakayama, who has rendered most satisfactory service to the Mitsui Bussan Kaisha as Manager of its Manila Branch, has been temporarily relieved of this duty by Mr. W. Tomotsune, and has gone home on a well-earned vacation.

Messrs. W. R. Green and Patrick Egan, American railway magnates, have arrived in the Philippines to personally look into the situation with reference to the Government's 4 per cent guarantee for the construction of railway lines.

Mr. Thomas S. Baker, Sub-manager of the Yokohama Branch of the Hongkong and Shanghai Banking Corporation, accompanied by Mrs. Baker, has gone to England on extended vacation. Mr. John MacLaren succeeds him at the bank.

Mr. Shukuo Kinoshita, Government Railway Engineer on the half-pay list, has left Japan for the United States where he will attend the seventh International Railway Congress to be held in Washington in May, as Japanese delegate.

Sir Even Cameron, K.C.M.G., has been compelled to resign from the London management of the Hongkong and Shanghai Banking Corporation, on account of ill-health. The London office is now under the management of Mr. A. W. Townsend and Mr. C. S. Addis.

The Society of Engineers and Shipbuilders of Hongkong passed a vote of condolence with the widow of Mr. Gabriel James Morrison, who was founder and the first President of the Society. It was suggested that the members take the lead in arranging that something permanent be done to commemorate and perpetuate the memory of the deceased, who had done so much for the community.

Dr. James F. Kemp has resigned the Presidency and from the Board of Directors of the Philippine Gold Mining, Power, and Development Company and announces that the Manila agency of the corporation is abandoned. Hereafter and until further notice the affairs of the Company will be conducted from its main office, 444 Parrott Building, San Francisco, Cal.

Messrs. Fred Wilson & Co., consulting engineers and general importers of machinery and structural iron, Manila, have removed their offices from No. 75 Calle Urbiztondo, Binondo, to No. 41 of the same thoroughfare. The new premises are more suitable for their stock of boilers, steam engines, pumps, belting and general engineer's supplies. Mr. Wilson, head of the firm, has just returned to his business after a long absence in England.

Mr. P. H. Ashmead, the new General-Manager of the Canton-Hankow Railway, has arrived in Canton from San Francisco and assumed the duties of his position. He was Chief Engineer of this construction when work was first commenced about two years ago. Mr. H. O. Howe, Acting Chief Engineer, accompanied by Taotai Wong Chung Liang, will go to Hankow and take charge of the construction at that end of the line.

Mr. L. D. Tandy, founder and General-Manager of the Singapore Electric Tramway System, recently celebrated his 42nd birthday with a dinner to a few special friends at Raffles Hotel. The principal toast, apart from that of Mr. Tandy himself, was that of Mr. J. Sibbons, General-Manager of the Oriental Telephone Company, who, it transpired, was a twin of Mr. Tandy's in respect of natal anniversary as well as electrical sympathies.

Mr. W. Elwell Goldsborough, M. Am. Inst. Elec. Engrs., Director of the School of Electrical Engineering, of Purdue University, who has, during the past three years, held the position of Chief of the Department of Electricity at the Louisiana Purchase Exposition, has become associated with Messrs. J. G. White & Co., of New York City. Professor Goldsborough was graduated from Cornell University in 1892 with the degree of M. E.

Mr. J. Lambert, R. N. R., has been appointed by the committee of Lloyd's Register to succeed Mr. Newman Mumford, as Lloyd's Hongkong surveyor. Mr. Lambert has resigned from the position of Superintendent Engineer of the Whampoa Dock Company. He has been in the dock company's service for eight years. Mr. Mumford, who has occupied his present position for nine years, leaves, in a few weeks, to represent Lloyd's Register at Constantinople.

Mr. W. N. Stevens, for some time Assistant Mechanical Engineer of the Rapid Transit Subway Construction Co., of New York City, has accepted a position with Messrs. J. G. White & Co., of 43 Exchange Place, New York. Mr. Stevens has had a wide experience as a constructing engineer in the designing and active construction of important power plants. He made both the preliminary and afterwards the final plans for the machinery of the power-house for the tramways of Sydney, Australia.

Mr. E. P. Osgood, of the Royal Sanitary Department at Bangkok, Siam, is serving on the commission which has taken up the work of the delimitation of the boundary between French Indo-China and Siam, in accordance with the Convention ratified last November between France and Siam. The present work is the delimitation from the Inland Sea to the town of Krat, which town is to be ceded to France. The Commission is composed of two Siamese and Mr. Osgood, and the survey work is in charge of Mr. Love, an Englishman.

It is announced that Mr. René Proust, who is retiring from the Malaysian Company's service at the Bukit Malacca mine, Raub, on account of that company's property being taken over by the Raub Australian Gold Mining Company, had accepted the position of Manager of the Jeher Mining Syndicate at Tanjong Malim. This company is at present laying a pipe line about 2 miles long, 18 to 25 inches diameter, and is cutting a ditch line about 4 miles long in order to supply the workings with the water requisite for hydraulic work. The company's property consists of 1200 acres and the Managing Director is Mr. Chow Thye.

DEATH RECORD.

Mr. E. L. Eppinger, a son of Mr. Louis Eppinger, Manager of the Grand Hotel, Yokohama, died recently in San Francisco, aged 50 years.

The death of Mr. A. H. White, formerly American Deputy Consul-General at Shanghai, is announced. He passed away in the United States recently.

Dr. F. W. Eastlake, a former professor in the Tokyo University, died recently at Tokyo of pneumonia, aged 46. He was an American and was an accomplished linguist.

Mr. Sigot, architect of the Public Works Department, Siam, died recently of smallpox at Bangkok. He was 25 years of age and had been only ten months in the country.

Mr. James Riches, Consul-General for Siam in London, died recently at his residence at Balham, in his 59th year. He had been attached to the Siamese Service for a period of over thirty years. He was a member of the Crown of Siam, 4th Class.

The death is announced of Mr. John O'Brien Saunders, C.S.I., Managing Proprietor of *The Englishman*, Calcutta. Mr. Saunders returned to England from India last year. He was the son of the late Mr. John O'Brien Saunders, the former proprietor of *The Englishman*. Deceased came out to India in 1876 to conduct the paper and he had kept up his connection with that paper until the day of his death. Mr. Saunders was created a C.S.I. two years ago. His death is deeply regretted in journalistic circles of India and the Far East.

Mr. Hisashige Tanaka is dead in Japan at the age of 61 years. He was the pioneer of electrical engineers in Japan, and most of the Japanese electricians had worked under him. As early as 1873 he manufactured a large number of the Siemens' telegraph machines for the Japanese Government. In that year he sold his factory to the Engineering Department and he himself became an engineer in the Government service. In 1882, when the Government was engaged in strengthening coast defence, he established a factory at Shibaura, in order to manufacture mechanical mines and fish torpedoes. These works were subsequently converted into the Shibaura Engine Works. In 1886 he made a tour through Europe and America, and on his return invented an alarm. The advancement of the Japanese electric engineering work to its present state is largely attributable to the efforts of the deceased.

FIRE RECORD

KUDAT, BRITISH NORTH BORNEO.—Practically the whole of this town was destroyed by fire recently. Loss, about \$175,000; insurance, about \$10,000.

TIENTSIN, NORTH CHINA.—Clarence House, a high old building on the French Concession, Tientsin, has been totally destroyed. The occupier was insured for Tls.10,000.

BURMA ELECTRIC COMPANY, SINGAPORE.—The plant of the Burma Electric Company, in Phayre-st, and the building it occupied, have been almost totally destroyed by fire. The loss is not announced, but is considerable.

FIRE LOSSES IN KOBE.—The losses to various Japanese insurance companies in the recent theater fire at Kobe, Japan, are approximately estimated at Y.50,000, variously apportioned among six companies.

TIGBAUAN, PANAY, PHILIPPINE ISLANDS.—The town of Tigbauan, Province of Iloilo, Panay, Philippine Islands, has been totally destroyed by fire, and 2000 people are homeless. The financial loss is estimated at about -P-200,000.

CEBU, PHILIPPINE ISLANDS.—Details from the city of Cebu, Philippine Islands, covering the recent big fire there, place the total loss at about -P-1,850,000 on which the insurance amounts to -P-750,000. The commercial stocks destroyed amount to approximately -P-1,000,000, the furniture -P-30,000, and the buildings -P-750,000.

RAFFLES SQUARE CONFLAGRATION, SINGAPORE.—Fire recently destroyed the property occupied by Messrs. Rodyk & Davidson, solicitors and advocates, and the Transatlantic Trading Company, Singapore. A Kling firm occupied the front part of the godown down stairs, and it is supposed that the fire originated there. The loss was large, partially covered by insurance. The building is owned by the Messrs. Meyer Brothers.

WORK OF FIRE BRIGADE, HONGKONG.—According to the report of the Superintendent of the Fire Brigade, Hongkong, for 1904, there were 57 fires and 64 incipient fires during the year, as against 49 and 55 in 1903. The estimated damage caused by the fires was \$761,736, and by incipient fires \$743. There was an intermittent supply of water in the mains from January 1st to July 3rd, during which period sea water was used as much as possible to save

the fresh water. One serious fire occurred during this period, February 25th, at 444 Des Voeux Road West, where six houses were wholly or partly destroyed. The total damage was estimated at \$62,000, part of which was covered by insurance. Two large fires took place at the Kowloon godowns, the total damage being \$180,000, covered by insurance.

RAILWAYS, SUPPLIES, ETC.

JOHORE RAILWAY MATERIAL.—The Straits Steamship Company has secured a contract for the carrying of material for the Johore Railway.

NEW STATION, PORT SWETTENHAM.—A new railway station is to be built at Port Swettenham, and the present buildings are to be utilized as stores.

NEW RAILWAYS, JAPAN.—The Railway Works Bureau, Yokote, Ugo, Japan, has been making surveys in the mountainous part of the Province of Ugo for a new railway.

PEKING-TO-KALGAN LINE.—It is announced at Peking that the money for the Peking-Kalgan Railway is to be raised in the provinces and not taken out of the Imperial Treasury.

TOKYO-NIIGATA (JAPAN) RAILWAY SERVICE.—The Nippon and Hoketsu Railway Companies will make an effort to run through trains between Tokyo and Niigata by May 1st.

SOUL-FUSAN RAILWAY, KOREA.—The Soul-Fusan Railway Company has decided to convert the Soul-to-Yong-teung-pho Section into a double line, and the construction work is about to begin.

RAILWAY EXTENSION, SINGAPORE.—The expenditure on the Singapore railway extension to the Tanjong Pagar Docks, to January 31st, 1905, was \$32,245. Estimated expenditure on whole extension, \$1,407,908.

RAILWAY MATERIAL, SWATOW.—A large shipment of railway material for the Swatow-Chowchowfoo Railway, has been received at Swatow, and it is expected the line will be ready for traffic in eighteen months.

COAL FOR THE BURMA RAILWAYS.—The East Indian Coal Company have obtained the contract for the supply of the bulk of the Bengal coal at Rangoon and Bassein during the period April 1905 to March 1906.

FLOOD PROTECTION, BURMA RAILWAYS.—The bank near Peinwegen Station is to be raised at a cost of Rs. 6,000; and Rs. 2,500 are to be spent on constructing a channel to protect the station itself against floods.

PUNJAB-BOMBAY NEW ROUTE.—The Agra-Kosi section of this line which will establish a new route from stations in the Punjab to Bombay via Delhi, India, and lessen the time in transit by about four hours, has been opened to the public.

HILL RAILWAY, PERAK.—The projected hill railway at Perak is now taking definite shape, a syndicate being in process of formation to put the work in hand so soon as the necessary formalities with the authorities have been satisfactorily settled.

YUEH HAN RAILWAY AGREEMENT.—It is said that the American Government is now willing to cancel the agreement for the building of the Yueh Han (China) Railway, provided a reasonable premium is paid to the American shareholders.

PENOTAL GEORGE TUNNEL, B. N. B.—The railroad tunnel at the Penotal George, British North Borneo, has finally been cut through. This, according to The British North Borneo Herald, assures the train running into Tenom some time the present month.

FUKIEN RAILWAY, CHINA.—The Peking Mandarins, hailing from Fukien Province, have sent in a representation to the Throne, with a view to acquiring the right to construct the Fukien Railway, with capital to be raised from the local Chinese merchants.

FUJIMI-OKATANI (JAPAN) RAILWAY EXTENSION.—Work on this section (some 17 miles) of the Government Central Eastern Railway is progressing steadily. It is hoped to have the line in operation by the beginning of June, when transportation of new silk cocoons will keep the road busy.

TRAIN SERVICE SUSPENDED, NORTH CHINA.—Official notice is given by the Imperial Railways of China, that owing to unforeseen circumstances, it has been deemed advisable to suspend the train service between Kou-pantsze, Yingkow, and Hsinmintun, North China, until further notice.

TUNNEL COLLAPSE, JAPAN.—A part of the Kumasaka Tunnel near Hosorogi Station on the Hokuriku Railway, suddenly collapsed one morning recently, presumably due to the snow which had fallen in that locality. The traffic between Kanazawa and Fukui has consequently been interrupted.

RAILWAY EXTENSION, JAPAN.—The Railway Construction and Traffic Bureau of Japan has decided, it is announced, to effect a junction between Sonobe on the Kyoto Railway and Ayabe on the Maizuru Railway, and the proposed line is now being surveyed. The length of the section will be 24 miles.

NEW ROLLING STOCK, F. M. S.—Two new trains with cars of the corridor type, divided into compartments to seat four and fitted up with lavatories in each, have been ordered from England for the Federated Malay States Railways and will soon be running, whereupon, it is announced, "class distinction" will disappear.

SYDNEY'S NEW RAILWAY STATION.—It is expected that the Central Railway Station buildings will be ready by the early part of next year. Tenders are shortly to be invited for the requirements in the way of tanking and other water services. The curbing and guttering to the approaches are also to be carried out by contract.

BURMA RAILWAY EXTENSION SURVEY.—Government of India has sanctioned survey of following lines in connection with Burma Railway Extension Survey: East Daga Railway Survey, 62 miles; Pegu-Synam Survey, 67 miles; Moulmein-Amherst Railway Survey, 46 miles. The surveys have been placed under the control of the Government of Burma.

TSE-POO RAILWAY, CHINA.—The railway at Tse-poo, Shansi Province, China, will, according to Chinese advices, shortly come under Chinese control, for which reason Chin Tien Yu, once a student in America, has been appointed to inspect the accounts in connection with the deal. Mr. Chin is a civil engineer by profession.

RAILWAY CONSTRUCTION, FRENCH INDO-CHINE.—A decree has been published authorizing the construction of the following railways in Indo-China: Extension of the Saigon Railway to Khan-Hoa—cost, \$5,840,000; a line from Phan-rang to Danhim, being the first section of the Lang-Bian branch line—cost, \$3,300,000; a line from Hué to Kwangtri—cost, \$1,400,000.

RAIL ENGINE CONTRACTS, INDIA.—The Springfield Locomotive Works, Darlington, England, has secured the contract for ten powerful passenger locomotives and tenders for service on the Indian State Railways. The engines are of the 6-wheeled coupled type, with leading bogie, 6-wheeled tenders and cylinders 19-inch diameter by 26-inch stroke.

RAILWAYS IN FRENCH INDO-CHINE.—The construction of the following railways in Indo-China has been officially authorized.—(1) An extension of the Saigon Railway to Khan-Hoa—cost, 29,200,000 fr.; (2) a line from Phan-rang to Danhim, being the first section of the Lang-Bian branch line—cost, 11,500,000 fr.; (3) a line from Hue to Kwangtri—cost, 7,300,000 fr.

LOCOMOTIVES FOR SIBERIAN LINE.—The East St. Louis Locomotive Works, America, recently received from St. Petersburg an order for 100 light locomotives, to be delivered within three months, for use on the Government line across Siberia. The vice-President of the works announced that the Company would not be able to fill the order within the required time.

INNAI-YOKOTA (JAPAN) LINE.—Owing to the tardy manufacture of rails, the construction of the Innai-Yokota section of the Government Railway's "O-U" line has been delayed of late, but now that these rails have all been made, the work is resuming its usual progress, and it is generally believed the section in question will be ready for service by the beginning of August, at the latest.

AUSTRALIAN HARD WOODS, INDIAN RAILWAYS.—As a result of the visit of Mr. J. Adams, F.C.H., on behalf of the Government of India, to Australia to investigate the possibilities of that country as a source for the regular supply of wooden sleepers for Indian Railways, trial orders of New South Wales sleepers are being placed with certain railways with the prospect of more to follow.

MALACCA-PULAN SEBANG LINE.—Up to January 31st, 1905, \$991,656 have been spent on this railway, the total sum voted for it in the estimate being \$1,036,650. The progress in earthwork is satisfactory. Seventy per cent of this part of the construction has been executed. Out of a total of eighty bridges and culverts fifty-five have been completed and sixteen are in progress. The rail-head is now at the 8th mile.

CANTON-HANKOW RAILWAY EQUIPMENT.—William M. Pinkston, one of the officials of the Canton-Hankow Railway Company, China, has gone to the United States to purchase material for the construction of the projected line between the two cities named, of which 20 miles have already been finished. About 750 miles of road between Canton and Hankow are to be built. The work will begin in June, and is expected to be completed in three years. A great deal of the material, including the ties, will probably be purchased on the Pacific Coast.

TONQUIN RAILWAY, WESTERN CHINA.—The French railway from Tonquin, which is to open out Western China, has been in course of construction for several years and good progress has been made; but the work is now proceeding slowly as the hill country has been entered and the difficulties to be overcome are considerable. Tunnels, galleries, and rock-cuttings are a necessity, and as local labor is scarce the engineers have no easy task before them. There is no question of money, as the railway is to be finished at all costs, for the French hope by its means to divert the bulk of the Yunnan and Szechuen trade to their ports in Indo-Chine.

OPENING UP OF KELANTAN STATE, SIAM.—To fully develop the resources of the State of Kelantan, Siam, a railway has become a necessity, while the construction of a section of the Royal Siamese Trunk Railway from Singora along the coast is also under consideration. The passenger traffic alone would probably yield a profitable income, while if the line is continued into the interior of Kelantan it will greatly facilitate the development of the large mining concessions which exist there. In a recent report on railways in the Federated Malay States two lines entering Kelantan from British protected property are suggested, both to be contained within the limits of what is known as the Duff Development Concession.

LOCOMOTIVE CONSTRUCTION IN CHINA.—The building of the third of a type of Mogul locomotives has just been completed at the Tongshan works of the Imperial Railways of North China. In the construction of this particular class of locomotive an unique arrangement of fixing the cylinders on the main frames, an idea of Mr. Kidner's, by means of four large bolts, has been adopted and substituted in place of thirty smaller bolts which are

invariably used in British locomotives. This arrangement is said to have the advantage over the other in the fact that the larger bolts give easier facilities for the removal of the cylinders for re-boring, or in case of breakage. The other locomotives, both of which have this bolting arrangement, have been running continuously on the line for one and three years respectively and they have given very satisfactory results.

RAILROADS, PHILIPPINE ISLANDS.—The *Engineering News* is informed that owing to the short time which has elapsed since the passage of the act of Congress, approved Feb. 6, 1905, authorizing the Government of the Philippine Islands to guarantee not to exceed 4% interest per annum on a stipulated amount of bonds issued for the construction of railroads by a private corporation or company in the Philippines, the plans in connection with the proposed railways are yet in a formative state, and no definite information as to when construction is likely to begin can be given you at this time. It is probable, however, that in a short time a prospectus will be gotten up showing the general plans for the construction of the railways, which will be given the widest possible publicity through the press, and otherwise, for the information of those interested so that they may be able to take intelligent actions when applying for franchises for the construction of a railway under the provisions of the act of Congress above mentioned.

BRITISH NORTH BORNEO RAILWAY.—The rails of this road are laid to the Penal Gorge, which is the last of the series of gorges which have had to be negotiated to get to Tenom, the interior terminus of the line. This means that the interior of British North Borneo is now accessible, and that it can be entered without having to climb the great mountain ranges which formerly barred the way. The cutting of the railroad track through the rocky defiles of the Padas River has been a stiff piece of work, but without it the development of the interior of British North Borneo would be impossible. In the language of the Chairman of the Court of Directors of the British North Borneo Company "it is a piece of railway which will forever bear witness to the skill of our Engineer (Mr. West), upon whom it reflects great credit." It is nearly nine years ago since Mr. West left England for Borneo, and during the whole of that time he has never left his work. Time after time the former Governor of the possession said that Mr. West would never be able to reach the interior. Now the Engineer says his work is practically accomplished, and that the traffic, in spite of the destruction of an important bridge, was not only being maintained but that it was increasing. The wreck of the bridge was due to an abnormal flood.

AMERICAN LOCOMOTIVES FOR JAPAN.—The lion's share of what is announced to be the largest single foreign order for locomotives ever given in the United States, or elsewhere perhaps, has been awarded to the Baldwin Locomotive Works of Philadelphia by the Japanese Government, through its agents in New York, Messrs. Mitsui & Co., in connection with Messrs. Fraser & Co., of Japan, representing the Yokohama Bank. The entire order, which calls for immediate construction and shipment, was for 152 locomotives. Of the total number the Baldwins are to build 77, the Atlantic Equipment Company 25 and a company in Glasgow, Scotland, 50. The locomotives are said to be of a composite type which will guarantee a fair amount of speed, coupled with strength and endurance. This will permit them to be used either for conveying troop and supply trains in Corea and Manchuria or for general use on the railroads of Japan. The American bidders secured the order in competition with the manufacturers of all Europe. A supplementary order for 18 more locomotives of a high class is shortly to be awarded by the Japanese Government agents. It is estimated that the actual cost of the 102 locomotives to be constructed in America will not fall below \$750,000, and with the

cost of transportation added the extent of Japanese patronage in this instance will be in the neighborhood of \$1,000,000. Time of construction and transportation was taken into consideration in giving the order to the builders of the United States, it is said. When the first batch of a dozen is completed it will be forwarded to the Pacific Coast by rail, and thence transported to Japan by fast steamship.

LOCOMOTIVE CONTRACTS, NEW SOUTH WALES.—A contract for locomotives has been let by the New South Wales Government to the Baldwin Locomotive Works, of Philadelphia, U. S. A. Tenders were invited throughout the world some time ago for twenty engines of the "P" class, and the twelve offers received were carefully scrutinized by the Railway Commissioners. They decided to accept the Baldwin people's tender, although another company under-quoted them to some slight extent. The price to be paid is £3900 per engine landed in Sydney, the whole lot to be delivered within twelve months. In the conditions of delivery the Baldwin tender was more favorable to the Railway Department than any of the others received. Mr. H. Howe, the manager of the Eveleigh workshops, is to be sent to America to superintend the construction, the Commissioners feeling that this is a preferable course to the appointment of an inspector on the spot.

The controversy over another locomotive contract of long standing in New South Wales has recently been revived by the receipt of an amended tender from James Martin & Co., Limited, of Gawler, South Australia. Towards the end of 1903 tenders were invited for the local manufacture of sixty heavy engines, half for passenger and half for freight traffic. Six tenders were received altogether, three from outside New South Wales and three from within. The prices quoted per engine were as follows: Beyer, Peacock & Co., £4100; unnamed German firm, £4613; James Martin & Co., Limited, £5616; Fitzroy Dock, £5200; Clyde Engineering Company, Limited, £6025; G. & C. Hoskins, Limited, £6083. The first three did not contemplate manufacture in the State and were consequently thrown out as informal. Then arose the question of the acceptance or otherwise of one of the local tenders, or alternatively the manufacture of the engines or some of them at the Government Railway Workshops. A committee of experts to whom the matter was submitted declared against the Fitzroy works, a Government institution, as quite unsuited for the purpose, and the field of selection was consequently narrowed still further. It was intimated that before such work could be undertaken at the railway workshops a large sum would need to be spent in additional plant, besides which the estimate of the railway officials was much higher than that of the Fitzroy Dock. The acceptance of the Clyde Engineering Co.'s tender was pressed upon the Government, but the Premier considered their price too high as compared with the others, and although they offered to reduce it somewhat, no business resulted in this direction. Then came the amended tender from the Gawler company, and the consequent reopening of the whole question. The new tender was £315,000, or £5250 per engine, and the Premier inquired if Messrs. Martin were prepared to make the locomotives in New South Wales on these terms. In an interview with the Minister on January 16, Mr. J. F. Martin said they would do so if the Government would make it 100 engines instead of 60. Mr. Martin was asked to put his fresh offer in writing, so that its details might be fully examined.

ELECTRIC LIGHTING, TRACTION, POWER, ETC.

MILITARY TELEPHONE, HONGKONG.—The military telephone from Kowloon and Stonecutter's Island to Hongkong has been reconstructed.

ELECTRIC TRAMWAY, RANGOON.—Work for the new electric tramway, Rangoon, has been commenced by Messrs. Darwood & Co., near the Turtle Tank, Poozoondaung.

TELEPHONE SYSTEM, AMOY, CHINA.—A telephone company has been organized at Amoy, China, by a Japanese, and it is installing an extensive system throughout this old Chinese city.

ELECTRICITY DEPARTMENT, SHANGHAI.—The estimate for capital expenditure in that Department for 1905 amounts to Tls. 91,545, less Tls. 11,000 for sale of old plant and material.

ELECTRICAL CONTRACT, KUALA LUMPUR.—Messrs. Burns & Co., Limited, of Penang, have secured the contract to install and light up the town hall at Kuala Lumpur with electric light and electric fans.

ELECTRIC POWER, CAWNPORE.—Government has sanctioned a license being granted to Messrs. Begg, Sutherland and Company, of Cawnpore, for the supply of electricity for general purposes in respect of the Cantonment of Cawnpore.

LIGHTING HOBART DOMAIN, TASMANIA.—The Hobart City Council has just had the electric light installed through the Domain to the Man-of-War Jetty. The installation was principally for the convenience of the fleet, at present in Hobart.

MADRAS ELECTRIC LIGHTING SCHEME.—The offer of the Messrs. Compton and the Colondon Company to carry out the electric lighting scheme for Madras is conditional. They ask for a guarantee of not less than 2500 hours of lighting annually.

TELEPHONE COMMUNICATION, KULANGSU, AMOY.—The Japanese Camphor Company wishes to establish a telephone system in the Island of Kulangsu, Amoy, but the Chinese authorities are opposed to the scheme on the ground that it will menace the interests of the Telegraph Administration.

PEKING-SHANGHAI WIRELESS SERVICE.—It is reported that certain influential persons at Peking have a scheme under consideration for the establishment of wireless telegraphy between Peking and Shanghai. The Director-General of the Imperial Telegraphs has been consulted in connection with the project.

HANJIN ELECTRIC RAILWAY COMPANY, KOBE.—This company will undertake to supply electric light and motive power to private consumers. Its line in the district under the jurisdiction of Osaka-fu is now completed. The works have been inspected and accepted and car service inaugurated.

SINGAPORE STREET LIGHTING.—The supply of lighting power which the Municipality of Singapore has arranged to obtain from the plant of the new Tramway Company will be for private consumers as well as the lighting of Raffles Place, the Square, and the Esplanade, to which localities the public lighting will for the present be confined.

GERMAN SUBMARINE CABLE, WOOSUNG.—Germany has purchased a lot of ground at Woosung, in the neighborhood of the Great Northern Telegraph Office, where the submarine cable she is now laying between Kiaochow and Woosung will be landed. From the latter place the cable will pass into the hands of the Great Northern and Great Eastern Telegraph Offices.

DUNEDIN (N. Z.) ELECTRIC TRAMWAYS.—The Dunedin Electric Tramways have now been running for 12 months. During that time the mileage run was 543,556 miles, while the passengers carried numbered 6,529,821, and the revenue earned amounted to £28,824. Carrying the statistics further, it may be added that one person has been killed through a tramway accident and that four others have been seriously injured.

ELECTRIC LIGHTING, CHINA.—Several of the larger mission schools in Hangchau and vicinity are considering the equipment of their schools, according to the American Consul there, with small electric light and power plants in connection with gasoline engine power. They are doing this both for the sake of the light and for the means such plants would afford for instruction. Fifty to 60-light plants will probably be about the size needed.

ADELAIDE (S. A.) TRAMWAYS.—Some time ago the South Australian Government notified the various horse tramway companies that it intended to take over the city and suburban lines under the Electric Tramways Act passed last session. One month was allowed for negotiations towards a mutual settlement of the question of price. This period has now expired without any such settlement being arrived at, and consequently there will be resort to arbitration. The companies have been invited to appoint one arbitrator to act for all of them.

ELECTRIC RAILWAY FOR HOKKAI, JAPAN.—A scheme is maturing for the establishment of the Hokkai Electric Joint-stock Company (Hokkai Denki Kabushiki Kaisha), the promoters being Messrs. Shinzo Takata, Chushichi Miyagawa, and several others in Tokyo and Hokkaido. The Company's capital is to consist of -Y-220,000, divided into 4,400 shares of -Y-50 each. Three thousand shares are to be taken up by the promoters and the remainder will be offered to the public. The Company will first establish a generating station at Toyahira-mura, Sapporo District, Hokkaido, with a view to supplying electricity to Sapporo and Otaru, and will afterwards construct electric railways at important places in Hokkaido.

SYDNEY (N. S. W.) TRAMWAYS EXTENSION.—The King and Ocean-streets cable tram is a thing of the past, the electric system taking its place. A special class of car with a special kind of brake has been adopted on this track, necessitating the alteration of nearly all the curves along the line. The brakes are of the Newall-Westinghouse, magnetic type, and are capable of bringing the cars almost to a dead stop within a few feet. They are under the immediate control of the drivers. Increased motive power has been provided at the Ultimo powerhouse by the installation of a Parsons' turbine engine of 3000 h.p., having a speed of 1500 revolutions per minute. The installation of this engine involved 16 additional boilers, the total cost running into £50,000.

POWER PLANT, RAMPUR, INDIA.—An electrical power plant is likely to be erected at Rampur, India, on the Jhelum River, where with a 6-mile feeder channel it has been found possible to get a water-fall drop from the river of about 450 feet. It is calculated that even with the minimum flow in the Jhelum it will be quite possible to obtain 100,000 horse-power. This is certainly a magnificent asset for Kashmir, far larger than anything that the Mysore Government can obtain from the Cauvery. When the installation of the power station is completed it will be possible to work the proposed Kashmir Railway electrically along its whole length of 180 miles, and also to provide power for industrial purposes in Srinagar, Abbottabad, Murree and Rawalpindi. It is also proposed to utilize the power in operating dredges electrically for the purpose of deepening the river in the Kashmir Valley, and so minimizing the floods which under existing circumstances devastate the country periodically.

KUALA LUMPUR ELECTRIC LIGHT SYSTEM.—According to the *Malay Mail* the headworks of the system for supplying Kuala Lumpur with electricity for lighting purposes are at Ulu Gombak, where water derived from the Gombak River, which meets the Klang River by the Government Offices, is being utilized to obtain the necessary power. The works in connection with the electric scheme begin at the sixteenth mile from Kuala Lumpur, that is to say, probably some five miles from the river's source. At this point there is a considerable

flow of water, even in the dry season, and the river bed falls sharply. Here, what is known as the intake dam is being constructed. The work consists of a concrete embankment at the lower part of the dam sufficiently strong to hold back the river between the two steep sides. From the lower end of the intake dam the channel starts on its way through a double cutting, after which it follows the contour of the hills on the left side of the valley. The water flows—or rather, will flow—along a semi-circular concrete bed, open at the top. This bed, with a fall of about 6 feet in the mile, winds round the side of the hills for a mile and a half before reaching what is known as the siphon. This expression refers to a big drop across the valley of the Sungei Pasir, a tributary of the Gombak. At this point the water will be conveyed up and down the hills in big iron pipes, the lower side being some 30 feet below the level of the upper. After this, the concrete channel continues for a mile round the hills until another tributary, Sungei Rumput, is reached. Here another dam, which is to act as an auxiliary, is being constructed. The line then goes on for a further quarter of a mile till a tremendous drop of 300 feet is come to. Here again the water is to be conveyed down pipes to the power station below, whence the electricity is to be supplied to the town. The intake dam is being constructed by the Government; the rest of the work is in the hands of Messrs. Walsh Bros., who, in addition to Chinese, are utilizing Punjabi labor on the laying of the line. The new road to Bentong will cross the pipe line by the Sungei Pasir, and will approach close to the channel at various points.

WATERWORKS AND IRRIGATION

COONOOR WATER SUPPLY, MADRAS.—The Government has sanctioned a revised estimate, amounting to Rs. 1,28,200, for the Coonoor Water Supply Scheme and a supplement estimate of Rs. 32,000 for the extension of pipe lines to the waterworks plant.

ARTESIAN WELLS, CHIHLI PROVINCE, CHINA.—The Chinese have adopted the Japanese system of digging artesian wells in Chihli, as an antidote against drought, which occurs so often in that Province. Students will be required to learn the art along this line, and, in course of time, when they have received sufficient training, they will be sent out to supervise the work of digging wells in the different villages.

SYDNEY (N. S. W.) WATER SUPPLY.—The Minister of Works of New South Wales has determined to let by contract the remainder of the work for the completion of what is known as the Cataract Dam, as adjunct to the water system of Sydney. Heretofore this work has been carried out by day labor, which has not proved a success. Over £100,000 have been spent in preliminary work, leaving £140,000 available for the actual construction of the huge embankment.

RANGOON WATER SUPPLY.—The source of the supply to the waterworks system of Rangoon, which is now in operation, is a lake 9 square miles in area. The surface of the lake, when fully stored, will measure 4½ square miles, with a storage capacity of over 13,500 million gallons, of which it is estimated that 6000 millions will suffice at 25 gallons per head, per diem, for the wants of 656,000 persons, leaving a balance of 7500 million gallons as a standby during the years of deficient rainfall.

ARTESIAN WELLS, SINGAPORE.—The officials have decided not to accept the offer of Messrs. Asimont & Sutton to conduct artesian borings in Singapore in the form presented. The proposers offered to make borings in certain localities, and if in eighteen months they could supply 5,000,000 gallons a day, that after a month's trial they were to be paid £25,000. The localities were to be chosen jointly and were to be placed at the disposal of the promoters by the Municipality free of charge. The matter has been referred to Mr. Scrivener, of the Federated Malay States Service, for investigation and report.

WATERWORKS, SOUL, KOREA.—The American Company which holds a franchise for the construction of waterworks for Soul is to commence construction work next spring. The water for the new system is to be taken by centrifugal pumps from the Han River, some five miles above the city. After passing a system of rapid mechanical filtration, the water will be pumped to the city by two high-duty triple-expansion pumping engines, each of a capacity of 5,000,000 gallons. The system of piping for distribution is to consist of 54 miles of cast-iron pipe, of from 4 to 24 ins. diameter, and a large number of fire and domestic iron hydrants. Pressure in the pipes is to be maintained, besides the pumps, by a steel standpipe located near the city.

EMBANKMENTS IN LOWER BURMA.—Embankments in Lower Burma have proved very profitable to the State, as well as to the cultivator. The Sangin Sagagyi embankment on the right bank of the Irrawaddy protected 41,830 acres, and yielded Rs. 96,045 last year after deducting working expenses. The Thongwa Island embankment protected over 29,000 acres, and yielded a net profit of Rs. 29,418. Up to date these two embankments have yielded a net profit of 140 lakhs. No account has been kept for the Maubin Island embankment, which protects 127,414 acres, or for the Sittang embankment protecting 35,624, but they have no doubt given an equally profitable return. Three other embankments are under construction.

BUILDINGS

EXAMINATION HALL, PEKING.—Tls. 500,000 are to be spent in rebuilding the Examination Hall at Peking.

NEW CHIEF COURT, RANGOON.—Work on this building, the corner stone of which was laid by Lord Curzon in 1901, is about to be commenced.

EXTENSIVE CONSTRUCTION, SHANGHAI.—Plans have been approved by the Municipal Council for the erection of 227 buildings in Shanghai.

OLIVIER HOTEL, TAKIMICHI, JAPAN.—Extensive improvements are being made to this property. The latest is the installment of a system for the supply of hot water.

ANOTHER IMPERIAL PALACE, PEKING.—Another luxurious palace is to be built for the Empress Dowager of China at a cost of Tls. 300,000, the construction of which is to commence immediately.

GENERAL HOSPITAL, RANGOON.—The Public Works Department of Burma has received tenders for the construction of the new General Hospital buildings at Rangoon, the estimated cost of which is Rs. 21,51,707.

NEW MUNICIPAL OFFICES, CALCUTTA.—With the beginning of March the contract for the erection of these buildings expired, and the Corporation is entitled to impose the penalties for failure. The Commissioners have appointed a Sub-Committee to advise in the matter of taking over and completing the buildings.

PROVINCIAL MINT, SZECHUAN, CHINA.—The Viceroy of this Chinese Province has asked permission of the Peking Government to establish a mint for the coinage of copper cent pieces. The profits will be devoted to local matters and Tls. 200,000 will be annually contributed to the Army Department in Peking.

STEEL STRUCTURAL MATERIAL.—Messrs. Brownlie & Murray, Structural Engineers, Glasgow, have just received some important contracts for shipment to the Far East, notably among these being three large godowns, crematorium building and furnace for Calcutta, and steel structural works for 480-feet span suspension bridge, and buildings for two large engineering shops. The same firm has also received further orders by cable for Chinese bunks and more than 100 tons of tie-rods for jute mill construction. The contracts involve the use of several hundred tons of steel.

BRIDGES

KRIAN RIVER BRIDGE, STRaits SETTLEMENTS.—The Krian River railway bridge is to have a 100-foot span added to it, at an expenditure of \$63,300.

BRIDGES, SHANGHAI.—The Scott Road bridge abutments and piers are now complete and the stringers are in position. The floor planking is being placed in position.

RAILWAY OVERBRIDGE NEAR RANGOON.—A new overbridge is to be constructed at Kemendine, Burma Railways, at a cost of about Rs. 3,000.

IRON BRIDGES, F. M. S.—Iron bridges are to be constructed at the 20 $\frac{1}{2}$ mile and 21 $\frac{1}{2}$ mile on the Rawang-Kuala Selangor Road, the 19 $\frac{3}{4}$ mile on the Rawang-Serendah Road, the 32 $\frac{3}{4}$ and 37 $\frac{3}{4}$ miles on the Serendah-Kuala Kubu Road, the 42 $\frac{1}{2}$ mile on the Pahang Road, and on the Bukit Kutu Road.

PUBLIC WORKS

ROBERTSON QUAY ROAD, SINGAPORE.—The Ramasamy people have secured the contract for building the Robertson Quay Road, Singapore.

PUBLIC GARDEN RECLAMATION, SHANGHAI.—The Municipality of Shanghai has been unable to obtain additional contractors for the work of mud transfer on the work of the public garden reclamation at Tls. 0.50 per fong. With a view, therefore, to expediting the reclamation, mud is being carried over the garden bridge by night at a cost less than the above figure.

TENDERS, SHANGHAI.—The following tenders have been accepted: That for making the alterations to the Kungping Road jetty, Tls. 363.80; that for removing 30 tons of mud daily from Defence and Yangkingpang creeks, Tls. 0.15 per ton; that for the structural alterations to the Carter Road police station, Tls. 728; that for the enclosure of the verandah of the tax and general offices, city building, Tls. 850; that for constructing about 120 chang of dwarf bunding between the Peking and Hankow roads, Tls. 9.75 per chang.

BEAUTIFYING SHANGHAI.—The widening of the Bund in Shanghai, which is now in progress, has necessitated the removal and transplanting of a large number of trees and shrubs. The surplus mud taken from the widened strip is being deposited in the portion reclaimed. The garden paths at the Municipal Hospital have been completed and the intervening ground is being raised. During the month of February, last, 6495 bedding plants, 110 shrubs, and 100 trees were planted, 200 fong of nursery ground trenched and 1,000 young trees transplanted.

ROAD EXTENSION, 1905, SHANGHAI.—A report by the Municipal Engineer enumerates the changes made in last year's plans for road extensions and widenings in Shanghai as bearing on the schedule for the current year. Among the most important changes are the following: Section B, Eastern District, is laid out for the first time with a system of trunk and crossroads; a number of small sites are scheduled for acquisition as sites for public latrines; the width of the Foochow Road between the Kiangse and Szechuan Roads, and of the Canton Road from the Kiangse Road to the Bund, is shown at 40 feet.

NEW TERRITORY ROAD, KOWLOON.—Soon after the signing of the Kowloon Extension Agreement, in June, 1898, and after the restoration of order, says *The Hongkong Telegraph*, a main road was laid out, and subsequently constructed as far as Tai-po Hu, a distance of 18 miles, at a cost of \$225,133. This excellent thoroughfare, giving access to the centre of the New Territory and obviating the necessity of communicating by sea,—a

passage frequently attended by danger in rough or foggy weather—passes through some of the most picturesque scenery to be found on the mainland, and, will certainly be one of the principal routes associated with the development of the country. Its construction was carried out without difficulty or opposition, the claims of owners whose lands were acquired being settled at once by arrangement or arbitration. Happily this continues to be the case in the making of other thoroughfares on the mainland, and considering that formerly it was impossible to get anything done locally in connection with public works, such a demonstration of good-will from, and hearty cooperation of, the inhabitants in carrying out the measures for the welfare of the Colony, is a matter of considerable importance. Mr. E. D. C. Wolfe tells us, in his report on the policing of the New Territory, that recently when the Government proposed to pay small sums to the elders of certain villages if they would undertake road repair, they at once entered into the scheme, and the result has been extremely satisfactory. This, of course, means a saving of money, and when we come to consider that, apart from repairing the thoroughfares at present existing, the villagers in the various districts are actually constructing roads to the entire satisfaction of the superintendents of the Public Works Department, the value of the cooperation will be more fully appreciated. At the present time there are about 13 miles of small roads, 5 feet 6 inches in width, which have practically been constructed by the villagers within the last three to four months. These lead on to the fine road running to Tai-po Hu, and which eventually we hope to see carried on past the town of Shekulon to the large market city of Sham-chun, and then away to Shatau Kok, at Starling Bay. So far the operations appear to have been confined to the construction of roads in the neighborhood of Tai-po Hu. One of them runs northwards to Sheung Shui, just above She-kulan, another in an easterly direction to Shun Wan, near Plover Cove, and a third to Shan Lo Tong, situated several miles to the north-east of Tai-po Hu. While the Government are considering the routes of several main thoroughfares which, in conjunction with the course to be taken by the Kowloon Canton Railway within British territory, will best develop the Kowloon Hinterland, the Public Works Department are engaged surveying another thirty miles of proposed roadway to connect various villages at present approached by narrow paths, at this time of the year almost impassable. Although it is work entailing considerable expenditure this will be more than counterbalanced by the facilities to be subsequently afforded to those who take in hand the opening up of the country to agriculture.

PORT WORKS, DREDGING, DOCKS, ETC.

NEW DREDGER, RANGOON PORT TRUST.—The new dredger *Hastings*, for the Rangoon Port Trust, has arrived at Rangoon from the Clyde.

PORT WORKS, RANGOON.—An estimate of Rs. 89,00,000, in connection with the new port works at Rangoon, has been sanctioned by the Government of India.

CONSERVANCY SCHEME, MANDALAY.—The Burma Government authorizes the Mandalay Municipality to raise a loan of Rs. 80,000 for the purpose of carrying out a conservancy scheme for the town of Mandalay.

DOCKING WARSHIPS, HONGKONG.—The Hongkong and Whampoa Dock Company will be busy for some weeks with a number of American warships from Manila. In addition to the battleships *Wisconsin* and *Oregon*, a transport and five torpedo-boat destroyers have arrived there for attention. They will go into dock in turn, and the repairs upon some of them are said to be extensive.

FORT PRYER SLIPWAY, SANDAKAN.—The completion of the extensive overhaul carried out on board the *Labuan* marks in no indistinct manner a very progressive step in the history of the Port of Sandakan, in that the Fort Pryer Slipway has been utilized for the first time, and proved itself of the greatest practical use in the repairing of the smaller craft frequenting Bornean water.

ANOTHER DREDGE FOR NEW SOUTH WALES.—The Government of New South Wales has forwarded an order to Messrs. Simons & Co., of Renfrew, Scotland, for the construction of a new sand-pump dredge, after the style of the *Antheon*, but 6 feet longer, with a greater carrying capacity, and consequently more powerful propelling machinery. The new vessel is intended for service on bar harbors. She will be built under the supervision of Mr. C. W. Darby, Inspecting Engineer for the Government in England.

PENANG HARBOR SURVEY.—The survey of the proposed harbor improvements at Penang has been completed with all the necessary plans, sections, and data. The survey extends from Fort Cornwallis to the southern harbor limit and embraces the 6-fathom line in the outer channel. A report will now be submitted by the consulting engineers to the Government as to the practicability of carrying out the island reclamation scheme as proposed by the Public Works Department in 1901, or to suggest such modifications as may appear to be desirable.

KOBE (JAPAN) HARBOR.—Steps have finally been taken towards the dredging of the Kobe (Japan) Harbor. The *Hyogo Kencho* has purchased two dredges from the authorities of Kagoshima Prefecture, at a cost of -Y-22,400 and -Y-24,400 respectively. Messrs. Sato and Mizoguchi, engineers in the service of the *Kencho*, have gone to Kagoshima and received delivery of the dredges, which are to be transferred to Kobe. The harbor is mostly deep as well as capacious, but there are sections which will be all the better for being deepened, and it is to make these improvements that the dredges have been secured.

IMPROVEMENT OF THE HARBOR, MANILA.—Vice-Governor Ide, to whom the matter was referred by the Civil Commission, is of opinion that it will be wise for the Government first to erect two warehouses in the reclaimed land in the Manila Harbor, and then, as funds are available, add to the number from time to time, until nine such structures, the number in the original plan, are completed. The military establishment is to have a 5-acre block of the new land adjoining the canal on the north side of the harbor improvements. Here it will construct its warehouses and build its own wharf. In compensation for this concession the military will give over to the Civil Government the site on the Pasig River now occupied by its warehouses.

FLOATING DRY DOCK, CAVITE, PHILIPPINE ISLANDS.—Satisfactory progress is reported on the floating dry dock building at Baltimore, U. S. A., for the Cavite Naval Station. The dock is under construction at Sparrows Point, and will probably be finished within the next year. By that time the question of its exact location in the Philippines will be settled. There is a naval view decidedly in favor of having this floating dock established at Olongapo instead of at Cavite. The Naval General Board especially favors the former place, and it was recently recommended that everything be laid aside to the end that the station at Olongapo may be developed.

WHANGPOO RIVER CONSERVANCY, SHANGHAI.—The Municipal Council of Shanghai recently asked the Diplomatic Corps at Peking for information about the terms of the Whangpoo River "conservancy" scheme adopted by the diplomats at the Chinese capital. The German Minister, who is Dean of the Corps, acknowledged receipt of the communication in the name of the Corps, but stated that "as diplomatic usage does not permit of publishing the details of negotiations between Governments before their conclusion, the representatives

of the Powers do not consider themselves authorized to communicate the terms of the proposals in question until they have been approved by their respective Governments as well as by the Chinese Government."

DEEP WATER PORT FOR PERAK.—Penang advices explain why the Government of Perak has leased the isolated territory of the Dindings from the Colonial Government of the Straits Settlements. The idea is to make the Harbor of Penang, which, with a deep-water frontage, has considerable latent possibilities, into a port with docking facilities. This scheme, when executed, will of itself automatically supersede the *Prye River Dock*, which is of quite secondary importance and not accessible to vessels of large size and draught. "All development expenditure," says *The Straits Times*, "on the harbor of the Dindings would be discharged from Perak revenues or loans, and it would certainly follow that it would be of commercial advantage to Perak to be served by a deep-water harbor with modern wharfage and docking facilities, both as regards all exports, and the import of mining machinery, railway plant, bridge girders, and other heavy material. The growing importance to Selangor of Port Swettenham, and its provision of deep-water berthing for seagoing steamers along its new wharves, has stimulated the desire of the Perak Government to be independent as far as possible, and to provide itself with similar sufficient port accommodation. For the general development of the west side of the Malay Peninsula, Port Swettenham in Selangor, and Kuala Lumut in the Dindings, may yet play a very important part, supported by such minor points of access as are provided at Port Dickson, Telok Anson, and Port Weld. When the two deep-water ports are fully developed there may occur a certain diminution of the distributing functions of Singapore and Penang, but that must be of little account for some considerable time to come."

SHIPBUILDING, MARINE, ETC.

CHINESE IMPERIAL NAVY.—The Chinese Government has appropriated Tls. 1,000,000 to begin the reorganization of the Imperial Navy.

REJOIN TRANSPORT SERVICE, JAPAN.—The steamer *Shinano-maru* and two other vessels of the Nippon Yusen Kaisha have rejoined the transport service of Japan.

STEAMER "SULTANA" SOLD.—The steamer *Sultana*, gross tonnage 6165, has been sold at auction at Messrs. Powell & Co's salesroom, Singapore, to Tan Loo Chiap for \$15,000.

LAUNCH OF "KANNON-MARU."—Steamer No. 26, *Kannon-Maru*, built at the Oaki (Japan) shipbuilding yard at No. 4 Fort in Shinagawa Bay, has been successfully launched.

FRENCH NAVAL BASES, INDO-CHINE.—The French Government has included in its proposed new naval program the establishment of two naval bases in Indo-China, and a second dock at Saigon.

FLOATING DOCK, TSINGTAU.—The big floating dock at Tsingtau, China, is expected to be finished in about three months. It will accommodate ships up to 500 feet in length and 100 feet in breadth.

AMERICAN MOTOR BOATS IN FAR EAST.—The Truscott Boat Manufacturing Company of St. Joseph, Mich., has made several large sales of its motor boats in the Far East, notably in Hongkong and Shanghai.

NORWEGIAN STEAMERS CHARTERED.—The Nippon Yusen Kaisha is reported to have chartered two Norwegian steamers for the North China and coastal service. This makes twenty-four chartered vessels in the N. Y. K's Fleet.

NEW NORDDEUTSCHER STEAMERS, BORNEO RUN.—When Captain Rodenberg, of the steamer *Manila*, returns from his six months' trip to Europe, he will bring out one of the two new Norddeutscher Lloyd steamers, which are building for the Borneo run.

STEAMERS CHARTERED, JAPAN.—The Japanese have chartered from Messrs. Butterfield & Swire two steamers, the *Anhui* and the *Chenan*, both 2400 tons, each for a period of three months, at \$14,400 per month, a reckoning of \$6 per ton.

CHINA MUTUAL STEAMSHIP COMPANY.—This corporation will shortly institute a regular service of two steamers a month from South Wales ports to the Straits Settlements, China and Japan, one from Swansea and one from Newport.

NEW JAPANESE DESTROYERS NAMED.—The names of twenty-five new Japanese destroyers have been announced. Two of them were built at Kure, four at Sasebo, seven at Yokosuka; two at Maizuru, and the others at private yards at Osaka, Kobe, and Nagasaki.

NEW CHINESE NAVIGATION COMPANY.—A Chinese syndicate with a capital of Tls. 300,000 is planning to open a steamboat line between Shanghai and Shaohsing, in Chekiang Province, the name to be Pao Ta Steamboat Navigation Company. A 1000-ton steamer is being now built in Hongkong for the company.

IMMENSE WATER BOAT, TELUK ANSON.—The largest craft ever built in the Federated Malay States, according to report, has been launched at Teluk Anson. She is the *Waterwitch*, a vessel 46½ feet long, whose mission is to carry drinking water during seasons of drought to the down-river villages.

NEW MITSU BISHI DOCK, SHANGHAI.—No. 3 Dock of the Mitsu Bishi Yard, Nagasaki, which was recently finished, has been opened. This dock has taken three years to construct, and is said to be the largest east of the Suez. It can accommodate a vessel of 22,000 tons, 714 feet long, 82 feet wide and 34 feet draught.

SAIGON SHIPPING, 1904.—The summary of shipping cleared at Saigon in 1904, issued by Messrs. William G. Hale & Co., Lloyd's Agents at that port, shows that out of a total tonnage of 481,070, only 93,380 was French tonnage and 235,917 was British tonnage—of the total 49 per cent British and 19 per cent French.

BRITISH STEAMER "HENRY" SOLD.—Mr. R. Tomikura of Tokyo, Japan, has purchased the British steamer *Henry*, which lately arrived at Yokohama from Cardiff, at the price of -Y-80,000. The steamer has been renamed the *Tai'an-maru*. She was built in 1883 and her tonnage is 2311 (gross) and 1464 (registered).

CRUISING YACHT SOLD, HONGKONG.—The cruising yacht *Iona* was recently purchased at auction by Mr. A. Ritchie for \$500. The craft has a length along water-line of 35 feet, 6 inches, breadth 8 feet, and depth 3 feet, 9 inches, with a sail area of 600 square feet. She was sold as she lay ready for sea, with all spare gear, fittings, boats, etc.

IRON STEAMSHIP LAUNCHED, PENANG.—The largest iron steamship ever built in Penang was recently launched from the yard at *Prye River Dock*. She is called the *Padang*, and is intended for the Messrs. Koe Guan Company's coastal trade. Mrs. P. W. Lawrie, wife of the Company's Superintending Engineer, performed the christening ceremony.

END OF THE STEAMER "GAELIC."—It is reported that the O. & O. steamer *Gaelic* is to be taken off the Pacific route after many years of useful service. In the course of twenty years she has travelled over 1,300,000 miles, with but one accident. It is understood the *Gaelic* is about to be sold by her owner, the White Star Company of Liverpool, and there is a probability of her being bought by the Japanese.

NEW CRUISER FOR FRANCE.—The French Minister of Marine, M. Thomson, announces that the construction is about to begin of an armored cruiser of the largest type, similar to the *Ernest Renan*, to be called the *Waldeck-Rousseau*, to offset the armored cruiser *Sully*, which recently went on the rocks in Along Bay, northeast of the Red River Delta, Tonkin, and which is considered to practically be a wreck.

KOWLOON DOCKS.—The American ship *Proteus* is still in No. 1 dock at Kowloon, but the repairs to her are nearing completion. The repairs to the *Westminster Bridge* are progressing favorably. The biggest job at Kowloon Docks at present is the repairs to the German steamer *Erna*. After leaving Colombo on her last trip the *Erna* ran upon a rock off the Ceylon Coast and damaged her bottom rather badly.

MACHINERY FREIGHT RATES, MANILA TO IPOH.—Mr. Walt Jackson, of Ipoh, gives the following figures relative to the transport of an engine from Manila to Ipoh:—From Manila to Singapore, a voyage of 7 days, the total freight was 212 Mexican pesos. Tanjong Pagar dock charges in Singapore, \$353.77. The Straits Steamship Company's freight to Port Dickson and Telok Anson, \$692.73. Railway freight, \$499.15.

JAPANESE SHIP SUBSIDIES.—It is stated in the *Overland China Mail* that the Japanese Government is subsidizing Japanese-owned steamers plying on the China Coast to the amount of nearly \$750,000, and it is stated that "as this is more than enough to pay for the coal, British steamers will have a hard struggle, and will eventually disappear altogether unless the British Government shortly does something of the kind," etc.

OPPOSITION TO FRENCH LAUNCH LINE, CHINA.—The French Minister at Peking has lately been using strong efforts to get a concession from the Chinese Government for a French company to establish a steam launch line between Shanghai and Shaoshing, Chekiang Province, but the Peking authorities have notified the Governor of the Province to oppose the scheme until the new commercial treaties are put into operation.

NEW LIGHT-DRAUGHT STEAMERS, SINGAPORE.—Messrs. Riley, Hargreaves & Co., of Singapore, have secured the contract for building for the Koninklijke Paketvaart Maatschappij two steel stern-wheel light-draught steamers for service at Palembang and Banjermassin. The vessels are to be about 100 feet long by 20 feet broad, and will burn oil fuel. The draught loaded will be 22 inches. The same firm built a somewhat similar vessel, the *Ogan*, for the company two years ago.

SUNKEN RUSSIAN WARSHIPS.—It is announced that the Japanese intend to renew the attempt of raising the sunken *Variag*, which is lying outside the harbor of Chemulpo. The enthusiasm in Japan regarding the attempt at raising the sunken warships at Port Arthur seems to begin to fade. Rear Admiral Arai, a highly-praised expert who was sent over to take a look at the wrecks and make an official report, has returned to Tokio. As the Government has given out nothing of his report, the impression prevails that the report was an unfavorable one.

TOYO KISEN KAISHA'S NEW SHIPS.—For the purpose of building two large 20-knot steamers of 12,000 tons each, the Toyo Kisen Kaisha (Japan) is reported to have negotiated a loan of -Y-5,000,000 from the Rothschilds of London, through Messrs. Samuel, Samuel & Co., Yokohama branch. The loan is guaranteed by the Yokohama Specie Bank, and is to be repaid in annual installments in from five to seven years. It is stated that parts of the vessels will be imported and fitted in Japan, the whole work to be completed in two years.

LARGEST SAILING SHIP FOR ORIENT.—The German shipbuilding firm of the Messrs. Rickmers is said to be building the largest sailing ship in the world at its Geestmunde yard. It will have five masts, four of which will carry topsails, topgallant sails and royals, while the fifth will be rigged with full gaff-sails. The vessel, the tonnage of which is over 8000, will also be equipped with an auxiliary engine of 1000 horse-power, and a propeller, enabling her to make a speed of

about 7 knots an hour during the calms so prevalent in the Indian Ocean. The ship will be employed in the trade to the Far East.

REPAIRS TO INSULAR GOVERNMENT VESSELS, PHILIPPINES.—The Governor-General of the Philippine Islands has caused the following executive order to be published: "No contract for repairs or alterations to any vessel belonging to the Insular Government shall be let until due application has been made to the Chief of Coast Guard and Transportation for any estimate of the cost of the work of making such repairs or alterations and the time necessary to complete said work; and in case the Chief of Coast Guard and Transportation shall certify that the cost of said work and the time within which the same can be completed by the Government Machine Shops belonging to his Bureau are the same or less than the most favorable bid received from private persons or firms, the Government estimate shall be accepted and the repairs or alterations shall be made by the Government Shops: Provided, That the foregoing regulation shall not apply to emergency repairs needed by vessels out of reach of Manila."

NEW STEAMSHIP SERVICE, QUEENSLAND.—The Queensland Cabinet has ratified the provisional agreement entered into by Mr. Frederic Jones, Commissioner of Trade, with Messrs. Burns, Philp & Co., respecting a regular steamship service between Brisbane, Sourabaya, Samarang, Batavia, and Singapore. Following is the basis of the proposals: An annual subsidy of £6000, terminating with the present South Pacific contracts, in about five years, to the present Dutch East Indies-Singapore line of steamers of Messrs. Burns, Philp & Co.; certain bi-monthly service (every alternate month), managed entirely by white crews; Brisbane, Sourabaya, Samarang, Batavia, and Singapore, to be regular ports of call on the inward and outward voyages; freights between Brisbane and any of the before-mentioned ports not to exceed 14s. 6d. per ton (each way); remission of Queensland Government Harbor and Port Dues and charges; the minimum quantity of Queensland coal to be used on each voyage to be 500 tons; ships' stores to be supplied at Brisbane if at equal current Sydney prices.

MINES AND MINING

GOLD DISCOVERY, SAGA.—A 4-acre gold mine has been discovered in Mikawa, Saga.

JAPANESE COPPER EXPORTATION.—The exportation of copper from Japan has come to a standstill, due to the large purchases made by the Government.

COAL STOCKS DECREASE, JAPAN.—Since the first of the current year stocks of Kyushu coal at Moji have been on the decrease, and are now about one-fourth the highest quantity on record last year.

NEW MINING LAW, JAPAN.—The new Mining Law of Japan is now in effect. Its principal provision from the foreigner's point of view is that it debars any foreigner from owning or working mines in Japan.

GOLD-MINING CONCESSION, KOREA.—The American, British, and Japanese Ministers at Soul have arranged for a joint audience with the Emperor in connection with a gold-mining concession at Suan, Hwangpang-do.

RAUB MINES OUTPUT, FEBRUARY.—The returns of the Raub Australian Gold Mining Company for the month ended February 25th, show that 4855 tons of stone produced 700 oz. of gold, valued at \$28,000.

MITSU BISHI COMPANY, JAPAN.—The Mitsu Bishi Company has contracted to transport 175,000 tons of iron ore from the Tai Ye mines at Wongshikong to Japan, as soon as the water in the river admits of the navigation of deep-draft craft.

ENGINEER'S DEPARTMENT, SINGAPORE.—The office of Chief Clerk, Engineer's Department, Singapore Municipality, has been placed on the list of special appointments at a salary of \$200 per month rising to \$250 by annual increments of \$120.

MINING SYNDICATE, KOREA.—A syndicate of Japanese, American, and English capitalists has been formed, according to advices from Japan, for mining purposes in Korea, and a gold field at Suan is soon to be given to the syndicate in the name of the British representative.

FOREIGN PROTEST, PEKING.—The Ministers have protested to the Wai Wu Pu taking exceptions to the mining regulations drawn by the Hunan, Szechuan, and Kangse gentry, all of which preclude foreigners from taking any share in mining operations in those Provinces.

FEBRUARY GOLD OUTPUT, F. M. S.—The total gold output of the Federated Malay States mines for February, 1905, was 700 ounces, obtained from 4.845 tons of stone treated. The value of the metal was estimated at \$28,000. The yield of the preceding month was 1155 ounces, valued at \$44,990.

KOLAR MINES, INDIA.—The Mysore Government are acquiring land in some seven villages of the Bowringpet taluk of the Kolar district with the object of granting mining rights therein. There will probably be a rush of applicants for concessions when the survey of the lands has been completed by the States Geological Department and acquisition duly made of the territory in question.

NEW CONVERSION RULES, PERAK.—New rules have been promulgated by the Perak Government in respect to applications for conversion of agricultural lands into mining lands, which provide, *inter alia*, that \$25 shall be deposited for every acre before the matter is dealt with by the State Council; that work shall be commenced within four months of approval by the Council, or the amount deposited shall be forfeited.

GOLD OUTPUT IN JAPAN.—Gold mining in Japan has been encouraged by the Tokyo Government to aid the specie reserve fund. About -Y-9,000,000 worth of gold was mined in the interior from March to December last. If the amount is added to the output in Formosa during the same period, it will reach -Y-10,000,000, and if the products in Japan until February, this year, be included, the total will exceed -Y-12,000,000 against -Y-6,000,000 in ordinary years.

PUSING LAMA TIN MINES, LIMITED.—This company, which was floated in London at the beginning of 1903, has commenced operations near Ipoh, Straits Settlements. Nearly £14,000 worth of machinery has been erected by Messrs. Riley, Hargreaves & Co., Singapore. The Consulting Engineers are Messrs. Osborne and Chappell; Manager, Mr. William Currie; Assistant Manager, Mr. Boadle; Resident Engineer, Mr. Cowan. The Company's property is known to be rich in tin supply, and there is a good water supply.

SYNDICAT DU YUNNAN, LIMITED.—An expedition, consisting of mining engineers and prospectors, has examined several of the departments on the Province of Yunnan, allocated to the Syndicate under the concession granted to it by the high provincial authorities, and ratified by the Chinese Imperial Government. The expedition visited various coal, copper, and other mines and deposits, including iron, silver, lead, antimony, etc. Owing to the war in the north, and the difficulties resultant therefrom which certain corporations have experienced, the Syndicate will defer for the time being further operations in Yunnan.

ITALIAN MINING DEMAND, KOREA.—In connection with the demand of Italy for a gold-mining concession in Korea, negotiations on the subject are now in progress between

the Italian Minister and the Korean Government. The following terms have been proposed by the former:—(1) The mining district is to be selected by the Italian Syndicate within two years from the date of the signing of the agreement; (2) the mining district to extend over an area of 12 square miles; (3) the mining rights to cover a period of 25 years; and (4) the royalty to the Korean Government to be 25 per cent of the net profits derived from the mine.

GOLD AND PETROLEUM, SUMATRA.—Jambi, a Province in South Sumatra, has long been known to have rich gold and petroleum deposits, but until lately they could not be worked owing to the unsettled condition of the country arising from chronic rebellion in the interior. Of late, the forces of the Netherlands India Government have been so successful in putting the rebellion down, that applications for mining concessions there came in too thick. The Governor-General has stopped this by closing Jambi to private mining enterprise. Surveys and prospecting will be taken in hand and afterwards the Government will put up the concessions to the highest bidder.

MINING IN MALAYA.—The following is from Ipoh: The recent trials made by Captain Addis of the new high-speed bubbling machines—the invention of Captain J. Addis and Mr. H. S. Martin—have proved them to be a very desirable innovation in the direction of labor saving. Captain Addis is now working a new mine owned by Mr. Choo Choon near Ipoh, the reports of which are highly satisfactory. Mining prospects are daily improving in Perak. Both Tronoh and Tambun mines are working in full blast. Papan, Limited, is said to be doing well, in common with most mining ventures in the Dinta District. From Tapah, Temoh, and Chendariang mines good reports have been received.

MINERAL POSSIBILITIES, BURMA.—A European syndicate have secured a mining lease for plumbago in the Thabeikyin township of the Ruby Mines district in Burma, where other concerns are also working the mineral, the Burma Ruby Mines, Limited, being the principal factor at present in the exploitation of plumbago in the district. The Burma Mining Syndicate have received licenses to prospect for gold, silver, copper, tin and other metals in the Yamethin, Meiktila and Kyauksi districts of Burma. The Shwebo and Upper Chindwin districts of Burma are also attracting attention in regard to their mineral possibilities and licenses have been issued by the authorities for gold, silver, coal and other minerals, with the exception of mineral oils.

GOLD PRODUCTION (1904) OF AUSTRALASIA.—The gold production of the Commonwealth of Australia and New Zealand during 1904 is estimated at 4,199,651 fine ounces as compared with 4,305,420 fine ounces in the previous year, thus showing a decrease of 105,769 ounces, or in value, of \$2,186,245. The following are the figures:

State or Colony.	1903. oz. fine.	1904. oz. fine.
Western Australia	2,064,801	1,983,231
Victoria	767,351	765,596
Queensland	658,176	624,917
New Zealand	479,746	466,440
New South Wales	254,260	269,817
Tasmania	59,891	66,400
South Australia	21,195	23,250
Total Australasia	4,305,420	\$ 4,199,651
Value	\$89,993,031	83,806,786

KECHAU AMALGAMATION, PAHANG.—The sale of the property of the Kechau Syndicate to Mr. E. A. Watson's Company (Kechau Gold Fields, Limited), has been confirmed, and the latter is now the only Company at work in the Kechau area. Not long ago there were three separate companies in Kechau working on lands the boundaries of which adjoined each other. This latest purchase will enable the Kechau Gold Fields to extend its boundaries, and, possibly, to work on a more extensive scale. Mr. A. H. Collbran, Manager of the selling Company, and Mr. J. Burns, his assist-

ant, are in Singapore. Exclusive of Mr. Watson, the staff remaining at Kechau consists of Mr. Thomas Lester, the new manager formerly of Penjum, and Messrs. T. Whiting and J. R. Coates. Mr. Watson is scheduled to sail for England this month.

KOLAR GOLD FIELD, INDIA.—The following are the returns for the month of February: *Balaghat*.—3,740 tons of quartz crushed yielded 2917.91 oz. and 2,750 tons of Tailings cyanided yielded 236.84 oz. making a total of 3,154.75 oz. as compared with 3,372.46 oz. in January. *Champion Reef*.—Milled 17,000 tons which produced 15,313 oz. of Gold, 13,494 tons of Tailings treated by the Cyanide Process produced 2,327 oz. making a total production of 17,640 oz. as compared with 17,739 oz. in January. *Mysore*.—15,600 tons of quartz crushed produced 14,712 oz. and 13,125 tons of Tailings cyanided, yielded 1,763 oz., making a total production of 16,475 oz. of Gold, as compared with 16,614 oz. in January. *Mysore West*.—Mill ran 619 hours, crushed 2,084 tons and yielded 1,022 oz. Bar Gold. *Nundydroog*.—6,150 tons of quartz crushed yielded 5,411 oz. and 4,632 tons of Tailings cyanided yielded 448 oz., making a total of 5,859 oz. of Gold as compared with 5,956 oz. in January. *Oregum*.—Stuff crushed 9,500 tons Gold produced 4,434 oz. Slimes and Tailings cyanided 10,424 tons produced 1,045 oz., making a total yield of 5,479 oz. of Gold, as compared with 5,657 oz. in January.

COAL MINES, BRITISH NORTH BORNEO.—Mr. W. R. Clark, Manager of the coal mines in the Cowie Harbor District of British North Borneo, has now done a considerable amount of preliminary development work in the interest of the British North Borneo Company, and a survey of a railroad from the mines to the water-side is being made. The distance is about 6 miles. It is believed that the Sandakan Bay Coal Fields Company will soon be in a position to supply all vessels calling at North Bornean ports, and also those passing to and from China. It is also intended to get some persons or company to work the coal outcroppings within half a mile of the railroad. At a place called Naloyan there is a seam 4 feet thick. This place, after the Padas Bridge has been erected, will be connected with Jesselton, which is said to be admirably suited for coaling vessels passing between Europe and China. The harbor at Jesselton and a portion of the West Coast have been surveyed by H. M. S. *Rambler*, which is significant, and its effect in facilitating and attracting shipping is not to be under-estimated, especially when Jesselton becomes, as it undoubtedly will become, the terminus of a great railway system and a port for coaling ships.

MINES OF SOUTH CHINA.—While comparatively little is known to the outside world of the mineral wealth of Kwangsi and Kwangtung Provinces a profitable industry awaits the syndicate fortunate enough to secure a concession from the Chinese Government. Not long since His Excellency Viceroy Tsen Shun-shuen brought the matter to the attention of the Imperial Throne, and a great effort is being made by Chang Shun-shuen, former Consul-General for China at Singapore, and at present Director-General of Mines and Railways for the Southern Provinces, with headquarters at Canton, in conjunction with Mr. Willis E. Gray, the former Manager and Engineer-in-Chief of the American China Development Company, to obtain certain coveted mining concessions in the south. Mr. Willis E. Gray has returned from Brussels, and it is understood that if he is successful in this connection the American China Development Company will be in a position to reassert itself in China, and to reinstate Mr. Gray in his former position and the Company in its operations. It is declared that while engaged in railroad construction in the south, the agents of the Company located many valuable mines in Kwangtung and Kwangsi which is the object of Chang and Mr. Gray to work, and which former engineers pronounced extremely valuable.

IMPROVEMENTS IN THE PHILIPPINES

OREGON PINE LUMBER.—The Insular Purchasing Agent received bids on April 8th to furnish Oregon Pine Lumber to the Philippine Government during the current year.

PUBLIC HOSPITAL, MANILA.—The Roman Catholic Church is now fitting up a building in the Walled City, which is being remodelled for the purpose, for a general hospital. It will contain about 100 beds.

SCHOOL-HOUSE FOR INDANG, CAVITE PROVINCE.—Sealed proposals have been received by the General Superintendent of Education for the construction of an intermediate school building at Indang, Province of Cavite, P. I.

STREET IMPROVEMENT, MANILA.—The plans presented to the Municipal Board for the widening of Calle Aguilar through its entire length, have been approved, and when the work is completed the thoroughfare will be 10-meter wide.

FORT MCKINLEY ROAD MATERIAL.—Proposals for furnishing all labor and material for constructing a metalled road at Fort William McKinley, Manila, were opened April 6th in the office of the Constructing Quartermaster at Fort Santiago.

BETTER WATER SUPPLY, BOTANICAL GARDENS, MANILA.—The Water Supply Department will soon improve the water supply in the Botanical Gardens by laying more pipes and making several connections with mains to facilitate the watering of the extensive grounds.

LUMBER FOR FORT WILLIAM MCKINLEY, MANILA.—The Portland (Ore.) Lumber Company has been awarded the contract to furnish the United States Government with 2,140,457 feet of lumber for Fort William McKinley, Manila. The award was made on the proposals of December 20th, last. The first consignment of 450,000 feet of material was loaded on the transport *Buford*, March 20th.

ROAD MACHINERY FOR FORT WILLIAM MCKINLEY.—A quantity of road machinery has been delivered on the military reservation at Fort William McKinley, near Manila, from the United States, the transport *Logan* bringing it on her last voyage. This consignment consists of a road roller, a traction engine capable of drawing four 10-ton stone cars, and the four cars which make up its train.

ROAD ACROSS ISLAND OF SAMAR.—The Civil Commission has appropriated, out of the funds to be realized by the issue of Improvement Bonds, the sum of -P-32,000 Philippine currency—\$16,000 gold—for the purpose of constructing a road and its necessary bridges connecting the Municipalities of Wright and Taft, in the Province of Samar. The construction of this road shall be commenced at Wright and shall be continued towards that of Taft, as far as the sum appropriated permits.

WATER EXTENSION TO SANTA MESA, MANILA.—Preparations are being made to lay the pipes necessary to carry the water from a 26-inch main at the foot of the San Juan Bridge, Manila, where the connection is to be made, to Santa Mesa Heights, a suburb of the city. The extension will be over a mile and will require about two months to lay, the estimated cost of the work being -P-12,500. The construction will be under the immediate direction of Superintendent Armstrong, of the Water Supply Department.

CITY ENGINEER'S DEPARTMENT, MANILA.—Major J. H. Case, City Engineer of Manila, has been made Chief Engineer-in-Charge of the new Water and Sewer Systems. Mr. O. L. Ingalls, Engineer-in-Charge, Manila Sewer System, has been relieved from duty in that capacity, and has reported to the Chief Engineer for assignment. His salary has been reduced to \$4000 gold per annum. Mr. Howard E. Hyde, Acting First Assistant City Engineer, has assumed the duties of Acting City Engineer during Major Case's newly-created post.

PROPOSALS FOR MINERAL OIL.—Sealed proposals for furnishing mineral oil for the military in the Philippines will be received at the office of the Depot Quartermaster, Headquarters Philippines Division, until 10 o'clock a. m., May 1st, and then opened. The successful bidder will be expected to enter into a contract with the Chief Quartermaster of the Philippines Division. Proposals should be endorsed "Proposals for Mineral Oil" and addressed to Lieutenant-Colonel F. Von Schrader, Deputy Quartermaster-General.

MANILA-FORT MCKINLEY BOULEVARD.—The construction of a boulevard from Manila to Fort William McKinley is a matter still unsettled in the minds of the authorities. Who is to pay for the improvement seems to cause the hitch. Both the civil and military would welcome the project, but it is a question of funds with both. Should the money not be forthcoming, the present road will be repaired and put in good order, the work being accomplished by the impressment of convict labor which is available at any time. The Manila Electric Railway and Light Company will establish a line on the road if it is determined to build it, and the company can get a right-of-way from the owners of a large tract of land through which the boulevard is intended to lead.

CONVICT LABOR, FORT WILLIAM MCKINLEY.—A unique stockade has been built at Fort William McKinley for the "accommodation" of a large force of prisoners from Bilibid Prison, Manila, the Government Penitentiary, that is being utilized on the works there. The stockade is a strong structure with a tower at each corner, each tower being equipped with a gatling gun which will "speak" should there be a dash for liberty on the part of the convicts. The stockade is of barbed wire strung on solidly-set posts, the wires being three inches apart and the whole structure being 14 feet high. It is built in two squares, a smaller one inside a larger, the interior having a measurement of 200 by 750 feet. At night time a light will be placed every ten feet. There is a passageway of 2 feet between the inner and outer rows of barbed wire, and the inner posts are set in the ground in a slanting position, the posts slanting inwards. One hundred and fifty prisoners have been sent there and are being guarded by a company of Filipino Scouts. All the gang are natives.

COPRA EXPLOITATION.—The Philippine Products Co., through Messrs. Colby & Co., 15 William-st, New York, are preparing for shipment from that city a large quantity of material, including boilers, engines, tanks, machinery, electrical apparatus, piping, &c., for their proposed plant in the Philippines to exploit the copra industry. The factory is to be located near Manila, and with another proposed plant, to be erected by Pacific Coast capitalists, will be capable of turning out one-half the quantity of copra and products of copra now figuring in the exports of that article. The factories will treat other oleaginous seeds as well as copra, which is the dried kernel of the cocoanut, and will manufacture by-products, such as oilcake and oilmeal, from the residue. The Pacific Coast company is capitalized at \$1,500,000 and their representatives are now in the United States for the purpose of buying machinery, &c., for the project. Most of the outfit, it is thought, will be bought in the West and shipped from San Francisco. The Philippine Products Co. have opened their office at 95 Anloague St., Manila.

FINANCIAL NEWS

TOKYO BAY STEAMSHIP COMPANY.—Dividend for 1904 announced at 12 per cent.

NATIONAL BANK OF CHINA.—Net profits during 1904 amounted to \$114,298.51.

RATE OF INTEREST, MADRAS.—The Bank of Madras has raised the rate of interest 1 per cent.

YOKOHAMA SPECIE BANK.—The Yokohama Specie Bank will open a branch office at Hankow, China.

BORNEO MINERAL SYNDICATE.—This company has been registered in London with a working capital of £100,000.

SIAM STEAM PACKET COMPANY.—This company is paying a dividend of 30 per cent. as a result of the business done in 1904.

CENTRAL STORES, LIMITED, SHANGHAI.—This company pays a final dividend of 60 cents per share making a total of 15 per cent for the year 1904.

NEW BANK, TIENSIN.—French and Spanish merchants are about to establish a bank, to be called the Kwako Bank, at Tientsin, with a capital of Tls. 4,000,000.

CHINESE GOVERNMENT BONDS.—The Chinese Government Loan Bonds issued in Chihli have been taken up to the extent of Tls. 4,000,000 by the people of the Province.

EXPLORATION SYNDICATE, STRAITS SETTLEMENTS.—Mr. Towkey Loke Yew has formed an important exploration syndicate, which has acquired 10,000 acres in Kuantan.

COMPANIES AMALGAMATE.—The East Asiatic Company and the West Indian Company, both of Copenhagen, have amalgamated interests with a combined capital of 10,000,000 k.

SHANGHAI TUG AND LIGHTER COMPANY.—During 1904 this company's profits were Tls. 193,762.28 as against that in 1903 of Tls. 180,541.95, showing an improvement of Tls. 13,220.38.

HONGKOW WHARF DIVIDEND.—The Shanghai and Hongkew Wharf Company, Limited, has declared a final dividend of Tls. 6 per share on old shares, and Tls. 3 per share on new shares.

MINERAL SYNDICATE, BORNEO.—A new company, with a capital of £1,000,000, has been registered in London, to work the minerals in the territory of the British North Borneo Company.

INTERNATIONAL BANKING CORPORATION, SHANGHAI.—This office has acquired an interest in the American China Development Company, and will be represented on the Board of Directors.

FRASER & NEAVE, LIMITED, SINGAPORE.—On the working of 1904 there was a sum of \$29,264 for division, and the directors have paid \$6.25 per share, and carried forward to current account \$1139.

SHANGHAI HORSE BAZAAR COMPANY, LIMITED.—The net profits for 1904 were Tls. 26,545.60 which enables the payment of a dividend of 10 per cent, a bonus of 2 per cent, and the carrying forward of Tls. 9750.21.

HANJIN ELECTRIC RAILWAY COMPANY, KOBE.—This corporation has decided to increase its capital stock by -Y-1,500,000 and to issue 30,000 new shares. Pending the new issue -Y-700,000 will be borrowed.

PAKNAM RAILROAD COMPANY.—The Paknam Railroad Company, a Bangkok (Siam) venture, made a profit of over Tcs. 37,000 during the second half of 1904. A 7 per cent dividend for that term has been declared.

SINGAPORE CONSOLIDATION.—It is reported in the papers of the Straits Settlements that Messrs. Riley, Hargreaves & Co., and Messrs. Howarth Erskine, Limited, will shortly amalgamate into a single liability company.

BANK AT KAGI, FORMOSA.—Sanction has been given for the establishment of the Kagi Bank at Kagi, Formosa, the bank having a capital of -Y-250,000. A branch will also be opened at Bokushikyaku, another town on the same island.

BANGKOK DOCK COMPANY, LIMITED.—The report of the Directory, for the year 1904, shows profits amounting to Tcs. 122,190. A dividend at the rate of 12½ per cent per annum, representing Tcs. 83,333, has been paid.

KARANGAN HYDRAULIC TIN MINING COMPANY.—The profits made by this Penang concern during the latter half-year of 1904 amounts to \$11,466.94. It is proposed to pay a dividend of 4 per cent, and to carry forward \$7,066.94.

PHILIPPINE CUSTOMS COLLECTIONS.—Collector Shuster's report shows that the Customs receipts for the month of March, 1905, were -P-1,565,811.35, an increase of between 60 and 70 per cent over the receipts for the month of February, 1905.

FIFTH DOMESTIC LOAN, JAPAN.—An understanding has been effected between the Government of Japan and the bankers, whereby the fifth Domestic Loan of -Y-100,000,000 will be issued in May next, the terms being the same as those relating to the fourth loan.

HONGKONG HOTEL COMPANY, LIMITED.—The profit for the latter half-year of 1904 amounted to \$89,326.25 as compared with \$78,424.49 for the corresponding period of 1903, showing an increase of \$10,901.76. Dividend of 10 per cent for period, or \$60,000.

SHANGHAI ICE, COLD STORAGE AND REFRIGERATING COMPANY.—The net profits for the year ended in November, 1904, were Tls. 17,081.78, out of which a dividend of 6 per cent has been paid. The new ice godown for storage purposes has been leased on satisfactory terms.

STRAITS AND GENERAL DEVELOPMENT COMPANY, LTD.—In the London High Courts of Justice, Chancery Division, permission has been granted to this Company to decrease its capital by £214,500 from £305,000, a loss of 15s. per share, having been suffered.

CHINA AND MANILA STEAMSHIP COMPANY, HONGKONG.—The net profits of this company for 1904 were \$38,107.70, which has been appropriated as follows: To reserve fund \$5,000; to pay a dividend of \$1 per share, \$24,275; to current year's account, \$8832.70. The capital of the company had been reduced to \$750,000.

TIENTSIN COMPANY CHANGES HANDS.—The Electric, Engineering, and Fitting Company (Messrs. Poulsen & Von Hanneken), of Tientsin, has been bought out by the new Imperial Chinese Telephone Company, Ltd., and as a result the new system will be cheaper and more extended than could have been under the old régime.

OSAKA (JAPAN) LIFE INSURANCE COMPANY.—The Osaka Life Insurance Company has been ordered by the Tokyo Government to wind up its business, which has been recognized by the authorities to be dangerous to the policy holders. Domestic troubles are the cause of the dismemberment of the corporation, according to Japanese reports.

HONGKONG ROPE MANUFACTURING COMPANY, LIMITED, HONGKONG.—The net profits of this concern during 1904, including the balance brought forward from the previous year, were \$121,137.07. A dividend of 20 per cent, or \$100,000, was paid to the shareholders, while \$11,137.07 were carried over to the current year's account.

SHANGHAI GAS COMPANY, LIMITED.—Total receipts during 1904 were Tls. 432,900.70 against Tls. 366,307.11, an increase of Tls. 66,593.59, or 18.18 per cent. Actual gas sales amounted to Tls. 374,460.02, against Tls. 293,736.54, an increase of Tls. 80,673.48 or 27.45 per cent. The average gas consumption is about 1,300,000 cubic feet per day.

(Concluded on page 38.)

FAR EASTERN STOCKS AND QUOTATIONS

COURTESY OF BENJAMIN, KELLY & POTTS, SHAREBROKERS, HONGKONG-MANILA, 10th April, 1905.

STOCKS	WHEN ESTAB- LISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	Approximate Return at Present Quotation*	CLOSING QUOTATIONS
											PER CENT	
Banks.												
Hongkong and Shanghai Banking Corporation.....	1865	\$10,000,000	80,000	\$125	\$125	{ g £1,000,000 s \$8,000,000 i \$250,000 }	... \$1,493,408	31-12-04	{ £1.10s. and bonus £1 @ ex-change is. 11 9-16=\$25.46 for second half-year 1904.....}	20-2-05	5 1/4	{ \$775 London £80 }
National Bank of China, Limited.....	1891	£699,475	99,925	£7	£7	{ c £175,533 e £191,973 }	..... £21,668	31-12-03	£2 (London 3s. 6) for 1903	1-2-04	5 1/4	\$36 buyers
Marine Insurances.												
Canton Insurance Office, Limited.....	1881	\$2,500,000	10,000	\$250	\$50	{ j \$1,400,000 s \$81,739 f \$950,000 }	..... \$150,494	31-12-03	\$17 for 1903	22-10-04	6 1/2	\$285 buyers
China Traders' Insurance Co., Ld.	1865	\$2,000,000	24,000	\$83.33	\$25	{ f £151,992 j £362,366 u £371,445 }	..... Nil.	30-4-04	\$4 1/2 for year ended 30-4-1904.....	8-12-04	7 1/2	\$58 sales
North China Insurance Co., Ld.....	1863	£150,000	10,000	£15	£5	T800,000	..... T217,119	30-6-04	Final of 10s. making £1 for 1903 ...	26-10-04	8	T95
Union Insurance Society of Canton, Limited.....	1867	\$2,500,000	10,000	\$250	\$100	{ s £1,850,000 g £20,000 f £372,749 j £893,110 u £846,773 }	..... £2,078,997	30-6-04	£35 for 1903	21-10-04	5	\$700 sellers
Yangtsze Insurance Association, Ld.	1862	\$800,000	8,000	\$100	\$60	{ f £700,000 s £37,794 }	..... £432,475	31-12-03	£12 for 1902	22-4-04	7 1/2	\$170
Fire Insurances.												
China Fire Insurance Co., Ld.	1870	\$2,000,000	20,000	\$100	\$20	{ x £125,675 f £2,561 }	..... £260,374	31-12-04	£6 dividend and £1 bonus for 1903...	10-3-05	8 1/4	\$86 sellers
Hongkong Fire Insurance Co., Ld.....	1868	\$2,000,000	8,000	\$250	\$50	£1,200,505	..... £36c,372	31-12-04	£34 for 1903	7-3-05	10 3/4	\$307 1/2
Shipping, Tug and Cargo Boats.												
China and Manila Steamship Co., Ld.	1882	\$750,000	(1) 30,000	\$25	\$25	5,000	8,832	31-12-04	£1 for 1904	27-3-05	5	\$21 sales
Douglas Steamship Co., Ld.	1883	\$1,000,000	20,000	\$50	\$50	{ i £185,000 s £85,439 }	..... Nil.	30-6-04	£2 for year ended 30-6-1904	29-9-04	6	\$34 sales
Hongkong, Canton and Macao Steam-boat Company, Ld.....	1865	£1,200,000	80,000	£15	£15	{ e £250,000 d £600,000 f £158,444 }	..... £26,160	31-12-04	£1 for second half year 1904.....	15-2-05	9 1/4	\$26 1/2
Indo-China Steam Navigation Com-pany, Ld.....	1882	£1,200,000	(2) 60,000	£10	£10	{ i £100,000 s £205,000 }	..... £5,853	31-12-03	10s. @ 1s. 10 5-16=\$5.37.82 for 1903..	13-7-04	4 1/2	\$121 buyers
Shanghai Tug and Lighter Co., Ld.	1903	T1,500,000	{ 200,000 100,000 }	T50	T50	i T25,000	..... 43,762	31-12-04	Final of { Tls 2 1/2 making Tls. 4 1/2 } for '04 Tls. 1 1/2 making Tls. 3 1/2 }	3-05	{ 9 7 1/2 }	T51 buyers T47 buyers
"Shell" Transport & Trading Co., Ld..	1898	£2,000,000	2,000,000	£1	£1	{ i £400,000 s £4,116 }	..... £58,852	31-12-03	Interim of 1s. (Coupon No. 5) for '04	1-1-05	5	21 sales
"Star" Ferry Co., Ld.....	1898	{ \$200,000 10,000 }	{ 10,000 10,000 }	\$10	\$10	{ i £60,000 s £15,093 }	..... £1,287	30-4-04	{ \$1 80, Div. 40 cts. bonus } for year end- ing 30-4-04. { \$0.90, " 20 " " }	2-6-04	{ 5 1/2 3 1/2 }	\$37 1/2 buyers \$28 1/2 buyers
Straits Steamship Co., Ld.	1890	\$500,000	(3) 5,000	\$100	\$100	{ e £21,075 r £18,000 i £230,153 }	..... £21,231	31-12-04	£10 for 1904.....	12-3-05	8	\$125 sales
Taku Tug and Lighter Co., Ld.	—	T. T1,500,000	30,000	T. T50	T. T50	{ e T102,000 d T212,614 }	..... T6,190	31-12-04	T1 3/4 final making T3 1/4 for 1904....	29-2-05	10 3/4	T30 sellers
Refineries												
China Sugar Refining Company, Ld....	1878	\$2,000,000	20,000	\$100	\$100	e £450,000	..... £42,812	31-12-04	Final of \$15 making \$20 for 1904....	24-3-05	9	\$225 sales
Luzon Sugar Refining Company, Ld....	1882	\$700,000	7,000	\$100	\$100	none	Dr. 85,987	31-12-04	\$3 for 1897	24-3-98	—	\$27
Perak Sugar Cultivation Co., Ld.....	—	T350,000	7,000	T50	T50	T100,000	..... T1,635	30-9-04	T2 1/2 for year ending 30-9-04	17-12-04	4 1/4	T55 buyers
Mining.												
Chinese Engin'ring and Mining Co., Ld.	1901	£1,000,000	1,000,000	£1	£1	q £40,000	..... £7,820	29-2-04	No. 3 of 1s 6d.....	15-9-04	—	T7.50 sales
Oriental Consolidated Mining Co., Ld.	1901	G. \$5,000,000	z 500,000	G. \$10	G. 10	none	G. \$672,093	31-12-03	Final of 50 cents making G. \$1 for '04	30-12-04	5 1/4	G. \$17 1/2 sales
Raub Australian Gold Mining Co., Ld..	1892	£200,000	{ 150,000 50,000 }	£1	£1	£4,873	Dr. £4,029	31-3-04	No. 12 of 1s.=48 cents.....	28-1-01	—	\$4 buyers
Société Francaise des Charbonnages du Tonkin	1888	F.4,000,000	16,000	F.250	F.250	{ l F.307,740 aF.1,529,652 }	..... F.87,333	31-12-03	Final of F.25, making F. 50 for 1903.	1-9-04	—	\$490

STOCKS	WHEN ESTAB- LISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	APPROXIMATE RETURN AT PRESENT QUOTATION*	CLOSING QUOTATIONS
Docks, Wharves and Godowns.												
Geo. Fenwick and Co., Ltd.....	1889	\$150,000	6,000	\$25	\$25	{ q \$70,000 i \$58,423 y \$10,000 y \$250,000 y \$300,000 }	.....\$8,577	31-12-04	\$3.75 for 1904.....	13-3-05	10½	\$36 sales
Hongkong and Kowloon Wharf and Godown Co., Ltd.....	1886	\$2,000,000	40,000	\$50	\$50		.....\$29,422	31-12-04	Final of \$2½ making \$5 for 1904....	11-3-05	4¾	\$107 sales
Hongkong & Whampoa Dock Co., Ltd.	1901	\$2,500,000	50,000	\$50	\$50	.....\$33,500	.....\$498,289	31-12-05	\$6 div. & \$1 bonus for 2nd ½ year '04	21-2-05	6¾	\$204
Howarth Erskine, Ltd.....	1901	\$1,200,000	12,000	\$100	\$100	.....\$60,000	—	30-6-04	\$10 div. & \$5 bonus for the year....	8-04	6½	\$245 buyers
New Amoy Dock Co., Ltd.....	1892	\$40,500	6,000	\$6¾	\$6¾	.....\$55,500	.....\$489	31-12-03	\$1¼ for '03.....	5-5-04	5¾	\$24 sellers
Riley Hargreaves & Co., Ltd.....	1899	\$875,000	6,000	\$100	\$100	.....\$150,000	.....\$40,936	31-12-03	(\$10 div. and \$2½ bonus } for '03... {\$7 dividend } for '03....	7-3-04	5¾	\$225 buyers
Do. (Preference).....			2,750						Interim of T5 account '04-05.....	6-1-05	6¾	\$111
S. C. Farnham, Boyd & Co., Ltd.....	1901	T5,520,000	55,200	T100	T100	T900,000	.....T48,153	30-4-04			8	T160 buyers
Shanghai and Hongkew Wharf Co.....	1902	T3,200,000	32,000	T100	T100	{ r T487,210 T9,880 }	.....T10,711	31-12-04	Final of T6 making T10 for '04...	30-3-05	6	T177½ sales
Tanjong Pagar Dock Co., Ltd.....	1864	\$3,700,000	37,000	\$100	\$100	\$2,100,000	.....\$206,645	31-12-04	(\$20 for second ½ year making } {\$26 for '04.....	20-3-05	7¼	\$365 buyers
Yangtsze Wharf and Godown Co., Ltd..	1902	T250,000	2,500	T100	T100	T17,500	.....T2,762	31-12-05	T18 for '04.....	29-3-05	9¾	T187 ex. div.
Lands, Hotels and Buildings.												
Astor House Hotel Co., Ltd. (Shanghai)	1901	\$750,000	(4) 30,000	\$25	\$25	none	.....\$9,989	30-6-04	\$2½ for year ending 30-6-04	30-8-04	8	\$31
Astor House Hotel, Ltd. (Tientsin)	—	T. T100,000	2,000	T. T50	T. T50	T41,000	.....T655	29-2-04	Interim of T4 making \$10.....	29-10-04	6	T150 sellers
Hongkong Hotel Co., Ltd.....	1866	\$600,000	12,000	\$50	\$50	{ r \$100,000 \$10,000 }	.....\$3,554	31-12-04	\$5 for 2nd half-year '04.....	30-3-05	7¼	\$140 buyers
Hongkong Land Investment and Agency Co., Ltd.	1889	\$5,000,000	50,000	\$100	\$100	e \$250,000	.....\$37,875	31-12-04	Final of \$6 making \$12 for '04.....	31-1-05	9¾	\$128 sales
Hotel des Colonies Co., Ltd. (Shanghai)	1902	T225,000	9,000	T25	T25	n T13,986	.....T680	31-3-04	T.087½ for the year ending 31-3-04.	28-5-04	4½	T21 buyers
Humphreys' Estate & Finance Co., Ltd.	1887	\$1,500,000	150,000	\$10	\$10	{ i \$200,994 e \$50,000 }	.....3,554	31-12-04	90 cents for '03.....	11-2-05	7½	\$12.35 buyers
Kowloon Land and Building Co., Ltd. ..	1889	\$300,000	6,000	\$50	\$30	none	.....\$377	31-12-04	\$3 for '04.....	31-1-05	7¾	\$39½
Shanghai Land Investment Co., Ltd.....	1901	T2,600,000	52,000	T50	T50	{ e T828,813 T170,000 }	.....T40,066	31-12-04	{ T3 final & T2 bonus making } { T8 for '04.....	16-2-05	7½	T115 sales
Tientsin Hotel des Colonies, Ltd.	1903	T70,000	1,400	T50	T50	none	.....T670	31-12-04	T5 for '04.....	1-8-05	10½	T41
Tientsin Land Investment Co., Ltd.....	1902	T772,600	7,726	T100	T100	i T67,300	.....T725	31-12-04	T4 final making T7 for '04.....	29-2-05	5½	T127½
Wei-hai-wei Land and Building Co., Ltd.	1899	T91,850	3,764	T25	T25	none	T ,687	31-12-04	None	—	—	T12 buyers
West Point Building Co., Ltd.	1889	\$625,000	12,500	\$50	\$50	none	.....\$1247	31-12-04	Final of \$1.70 making \$3.20 for '04...	31-1-05	5½	\$55
Cotton Mills.												
Ewo Cotton Spinning and Weaving Co., Ltd.	1895	T750,000	15,000	T50	T50	none	.....T12,844	31-10-04	T4 for year ended 31-10-03.....	22-12-03	12¾	T32½ sales
Hongkong Cotton Spinning, Weaving and Dyeing Co., Ltd.....	1901	\$1,250,000	125,000	\$10	\$10	none	.....\$22,862	31-7-04	50 cents for year ended 31-7-04	12-9-04	3	\$16½ buyers
International Cotton Manufacturing Co., Ltd.	1895	T750,000	(5) 10,000	T75	T75	T50,000	.....T13,629	30-9-04	Interim of 3% a/c 1898	30-4-98	—	T30 bnyres
Laou-kung-mow Cotton Spinning & Weaving Co., Ltd.	1895	T800,000	(6) 8,000	T100	T100	none	.....T10,000	31-12-04	Interim of 4% a/c 1898 on 6,000 shares	1-8-98	—	T35
Soy Chee Cotton Spinning Co., Ltd.	1895	T1,000,000	2,000	T500	T500	/ T5,658	.....T26,389	31-12-03	4 % for 1897.....	2-2-98	—	T150
Cigar and Tobacco Cos.												
Alhambra, Limited.....	1898	\$60,000	300	\$200	\$200	none	.....\$799	30-6-04	\$125 for year ending 30-6-1900	15-8-01	—	\$100
Philippine Company, Limited.....	1904	\$675,000	67,500	\$10	\$10	—	—	—	First year	—	—	\$9½ sellers
Shanghai-Sumatra Tobacco Co., Ltd. ...	1902	T600,000	(7) 30,000	T20	T20	{ v T24,820 T25,000 }	.....T1,297	31-10-04	Final of T6 making T9.....	8-3-05	13½	T68 sales
Miscellaneous.									First year.....	—	—	\$115 sales
Anglo German Brewing Co., Ltd.....	1905	\$400,000	4,000	\$100	\$100	—	—	—	Interim of 50 cents for '04.....	25-11-04	8	\$12½ buyers
A. S. Watson & Co., Ltd.....	1886	\$900,000	90,000	\$10	\$10	{ e \$25,000 }	.....\$2,883	31-12-03	6d. per share for '03.....	21-7-04	5	\$5½
Bell's Asbestos Eastern Agency, Ltd....	1895	£5,377 10s	8,604	12s. 6	12s. 6	none	£161	31-12-03	£3 for 1904	1-4-05	8½	\$36
Campbell, Moore & Co., Ltd.....	1886	£12,000	1,200	\$10	\$10	\$8,000	.....\$182	31-12-03	{ Interim of £1.20 for '04.....	20-7-04	11¾	\$21 sellers
Central Stores, Ltd.....	—	\$91,845	6,000	\$15	\$12	\$20,000	.....\$1,253	31-12-03	{ None.....	—	—	\$100
Do. (Founders').....	1904	\$360,000	24,000	\$15	\$7½	—	First year	31-12-03	Preferential of 7% for '04.....	20-7-04	8½	\$7½ sellers
Do. (New Issue).....	1904	\$720,000	(8) 60,000	\$12	\$12	none	.....Nil.	31-12-03	60 cents for 1903.....	21-3-04	4¾	\$14½
China-Borneo Co., Ltd.....	1903	—	T200,000	4,000	T50	T50	.....T30,000	31-12-04	T5 for 1904	24-3-05	7¾	T65
China Flour Mill Co., Ltd.	1901	\$300,000	30,000	\$10	\$10	none	.....\$3,739	29-2-04	None	—	—	\$10
China Light and Power Co., Ltd.	1901	\$1,000,000	100,000	\$10	\$10	\$80,000	.....\$1,581	31-12-04	80 cents for 1904	18-1-05	9¼	\$8¾ sales
China Provident Loan and Mortgage Co., Ltd.	1898	£1,000,000	100,000	\$10	\$6	—	—	31-7-04	£1¼ for year ending 31-7-03	20-11-03	—	\$14½ buyers
Dairy Farm Company, Ltd.....	1896	\$187,500	25,000	\$7½	\$6	—	—	—				

STOCKS	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	Approximate Return at Present Quotation*	CLOSING QUOTATIONS
Miscellaneous.—Continued												
E. L. Mondon, Ltd.	1902	T350,000	7,000	T50	T50	none	Dr. T152,318	31-12-03	T5 for 1902	2-5-03	—	T25 sales
Fraser & Neave, Ltd.	1898	\$225,000	4,500	\$50	\$50	\$112,500	.....\$2,706	31-12-03	\$5 dividend and \$2½ bonus for '03..	26-3-04	7½	\$101
Green Island Cement Co., Ltd.	1889	\$1,000,000	100,000	\$10	\$10	\$400,000	.....\$95,054	31-12-04	\$2 for 1904	27-2-05	7¾	½ \$27 sales
Do (New issue)	1905	\$500,000	50,000	10	\$5	\$250,000	.....\$13,104	29-2-04	Interim of \$1.....	28-11-04	14	½ \$16 sales
Hall & Holtz, Ltd.	—	\$420,000	(9) 21,000	\$20	\$20	\$186,000	.....\$13,104	29-2-04	{ Final off 6 per cent and bonus of 1 { per cent making 22s. for '03... }	25-5-04	7½	\$25 sales
Hongkong and China Gas Co., Ltd.	1864	£70,000	7,000	£10	£10	£23,109	.....£7,625	31-12-03	{ £1.00 { 50 cents } for year ending 30-4-04	18-7-04	6	£160 buyers
Hongkong Electric Co., Ltd.	1889	£600,000	{ 30,000	£10	£10	£3,000	.....£1,747	30-4-04	{ 50 cents } for year ending 30-4-04	18-7-04	4½	£17 buyers
Hongkong High-Level Tramways Co., Ltd.	1899	£600,000	{ 30,000	£10	£5	none	.....					£11 buyers
Hongkong Ice Company, Ltd.	1881	\$125,000	5,000	\$25	\$25	k	\$60,000	.....\$5,356	Final of \$13 making \$17 for 1904...	14-2-05	7	\$245
H'kong Rope Manufacturing Co., Ltd.	1883	\$500,000	10,000	\$50	\$50	\$50,000	.....\$8,395	31-12-03	\$10 for 1903	8-2-04	6½	\$155
Hongkong Steam Waterboat Co., Ltd.	1900	\$150,000	15,000	\$10	\$10	\$2,500	.....\$299	30-9-04	{ Final of 70 cents and 50 cents { bonus, making \$1.90 for the year }	26-11-04	10½	\$18½ sales
Katz Brothers, Ltd.	1896	\$1,000,000	10,000	\$100	\$100	\$375,000	.....\$93,400	31-12-04	\$8 for 1904 .....	...-3-05	6	\$135 buyers
Lane, Crawford & Co., Ltd. (Shanghai).	1903	\$250,000	2,500	\$100	\$100	none	.....\$21,582	29-2-04	Interim of \$5.....	19-11-04	8	\$135 buyers
Maatschappij tot Mijn-, Bosch- en Landbouwexploitatie in Langkat	1902	G.2,500,000	25,000	G.100	G.100	{ i T528,210	.....T35,849	31-10-04	{ First quarterly dividend of T7½ { for '05	15-3-05	13	T237½ buyers
Maynard & Co., Ltd.	1901	\$34,000	3,400	\$10	\$10	none	—	31-10-04	\$2 for year ended 31-10-04	12-3-04	9	\$23 sales
S. Moutrie & Company, Limited	1899	\$200,000	4,000	\$50	\$50	\$5,000	.....\$832	30-6-04	{ Final of \$3 making \$5 for year { end. 30-6-04	28-12-04	9	\$55 sales
Shanghai and Hongkong Dyeing and Cleaning Co., Ltd.	1903	\$60,000	1,200	\$50	\$50	none	Dr. \$5,537	31-8-04	None.....	—	—	\$50
Shanghai Gas Co., Ltd.	1903	T800,000	16,000	T50	T50	{ q T145,000	.....T8,011	31-12-04	{ T3½ final and T1½ bonus mak- { ing T8½ for '04	8-3-05	7¾	T112 sales
Shanghai Horse Bazaar Co., Ltd.	1904	T270,000	5,400	T50	T50	T45,000	.....T10,247	31-12-03	T5 for 1903	8-5-05	5¾	T88 sales
Shanghai Pulp and Paper Co., Ltd.	—	T450,000	4,500	T100	T100	T25,000	.....T6,968	31-12-04	Final of T8 making T14 for '04....	28-2-04	9¼	T155 sales
Shanghai Waterworks Co., Ltd.	1881	£144,000	7,200	£20	£20	£140,000	.....T7,369	31-12-03	Interim of 15s. for '04	25-7-04	6	T430 buyers
Singapore Dispensary, Ltd.	1891	\$30,000	600	\$50	\$50	\$20,000	.....\$1,769	31-7-04	\$6 for year ended 31-7-04	19-11-03	8	\$80
South China Morning Post, Ltd.	1903	\$150,000	6,000	\$25	\$25	none	Dr. \$39,020	29-2-04	None	—	—	\$23 sales
Steam Laundry Co., Ltd.	1902	\$75,000	{ 5,000	\$5	\$5	none	.....\$3,644	31-5-04	{ 60 cents for year ended 31-5-04 .. { First year	2-8-04	8½	\$7 buyers
Straits Ice Company, Ltd.	1884	\$200,000	{ 10,000	\$5	\$3	none	.....\$700	31-12-04	\$10 for second half year '04 .....	...-2-05	10	\$125 sales
Straits Trading Co., Ltd.	1887	\$2,500,000	250,000	\$10	\$10	{ e \$750,000	.....84,813	30-9-04	{ \$1 dividend and 35 cents bonus { for half year ended 31-9-04 ..	...-12-04	6½	\$41½ buyers
Tientsin Native City Waterworks Co., Ltd.	1902	T356,000	3,560	T100	T100	none	.....T2,025	31-12-04	T2 for 2nd half year '03	9-4-04	—	T. T100
Tientsin Waterworks Co., Ltd.	1901	T. T200,000	2,000	T. T100	T. T100	T15,259	.....T2,211	30-4-04	Final of T4 making T8 for '03/4	20-6-04	6½	T. T130
United Asbestos Oriental Agency, Ltd. Do. do. (Founders')	1896	\$100,000	{ 9,900	\$10	\$4	}\$20,000	.....\$480	31-5-04	{ 90 cents { \$29.70 } for year ended 31-5-04 ..	6-8-04	9¼	\$9½ buyers
Watkins, Limited	1899	\$100,000	10,000	\$10	\$10	e \$4,802	.....\$1,042	31-12-03	\$1 for 1903	28-3-04	12	\$8½ sellers
William Powell, Ltd.	1901	\$120,000	12,000	\$10	\$10	e \$3,000	.....\$588	30-6-04	Final of 70 cts. making \$1.20 for 03/4	28-9-04	9¾	\$12½ sellers

LOANS AND DEBENTURES	AGENTS FOR THE LOAN	AMOUNT OF LOAN	PAR VALUE	OUT-STAND'G BONDS	WHEN PAYABLE.	CLOSING QUOTATIONS
Chinese Government, 7 per cent. Silver Loan 1886 E.	{ H. K. & S. { Bk. Cor. { The Company..	T767,200 \$500,000 £500,000	T250 \$500 ¶	1969 all £48,000	Mar. 31st & Sept. 30th each year until Mar. 31st, 1917. Half yearly, June 30th and December 31st	par. { par. { par. } Plus accrued interest
Hongkong Hotel Co., Ltd., 6½% Mortgage Debentures of 1899†						
Chinese Engineering & Mining Co., Ltd., 6 per cent Debentures of 1902†						

*a Amortisation Fund.**b Building Reserve Account.**c Capital Reserve Fund.**d Depreciation and Insurance Fund.**e Equalization of Dividend Fund.**f Exchange and Investment Fluctuation Account.**g Gold Reserve Fund.**h Exchange Reserve Account.**i Insurance Fund.**j Reinsurance Fund.**k Contingencies Account**l Legal Reserve Fund.**m Electric Light Installation Fund.**n Sinking Fund.**o**p Authorized capital \$2,000,000.**q Depreciation and Repair Fund.**r Repairs and Renewals Account.**s Silver Reserve Fund.**t**u Underwriting Suspense Account.**v Special Works Fund.**w 14,000 shares unissued.**x 1,166 shares unissued.**y Premium on New Issue.**z 75,000 owned by the Company.**† 5,725 shares unissued.**‡ First issue of 60,000 of which 10,411 unallotted.**§ 785 shares unissued.**¶ 7,600 shares unissued.**|| 1,616 shares unallotted.**† 842 shares unallotted.**† Only 13,000 shares issued.**g Based on last year's dividend.**h 373 held by the Company.**i In certificates of £20 and £100.**j Redeemable in 10 years, or at option of Company the Company giving 6 months' notice.**† Redeemable at par at rate of £10,000 per annum from 31st December, 1903, to 31st December, 1952.**Dr. Deficit.*

FINANCIAL NEWS

(Continued from page 34.)

BRITISH NORTH BORNEO COMPANY.—The revenue of this corporation for 1904 amounted to about \$975,000, which is an increase of about \$70,000 over 1903. The estimates for this year show a revenue of about \$1,096,000, or an increase of about \$100,000 over 1904, while the expenditure of the State on revenue account is estimated at about \$600,000.

SOY CHEE COTTON SPINNING COMPANY, SHANGHAI.—The profit on working account for 1904 amounted to Tls. 80,523.29, as against Tls. 88,758.80 for the preceding year. The balance at credit of profit and loss, after the deduction of all charges, interest, etc., amounted to Tls. 49,124.79, which included the sum of Tls. 26,389.77 brought forward from 1903 account. No dividend.

BANK OF JAPAN.—The net profits of this institution for the second half-year of 1904 amounted to -Y-2,550,900 which, with -Y-426,900 brought over from previous account, gives a total net profit of -Y-2,977,800. This has been distributed as follows: Dividend, -Y-900,000; reserve, -Y-550,000; officers' rewards and expenses, -Y-165,000; bonus to stockholders, -Y 900,000; carried forward, -Y-463,000.

LUZON SUGAR REFINING COMPANY, HONG-KONG.—Messrs. Jardine, Matheson & Co., General Agents, in their annual report state that during 1904 the refinery of this company at Malabon, Luzon, remained silent during the whole year under review, there being no outlet for its sugars, but as prospects have somewhat improved, arrangements have been made to resume work at an early date. Inclusive of \$73,905.88 brought forward from the year 1903, the balance at debit is \$85,937.63.

SINGAPORE DOCK EARNINGS.—The report of the Tanjong Pagar Dock Company for the past half year shows that the net amount available for distribution, including the sum of \$264,251.74 brought forward from previous account, to be \$1,176,851.25. From this amount a dividend at the rate of \$20 per share will be paid for the half year on the subscribed capital of the company, \$30,000 placed to reserve for bad and doubtful debts, \$200,205.73 written off for depreciation of property, etc., leaving \$206,645.52 which is carried forward. The total amount of the debenture issues is \$1,615,000.

RILEY, HARGREAVES & CO., SINGAPORE.—The Directors' report for the year ended December 31st, 1904, shows the following:—Net profit for the year, after paying interest on the debentures, deducting depreciation and cost of improvements to buildings and plant, writing off bad debts, reserving a further sum for doubtful debts, and including \$10,936.24 brought forward from the previous year, was \$191,686.53. This sum has been allocated as follows: To pay the dividend of \$7 per share

on preference shares, \$19,250; to pay a dividend of \$70 per share on the ordinary shares and in addition a bonus of \$2.50 per share, \$75,000; to place to special reserve fund, \$25,000; to allow for directors' fees, \$2600; to allow as a bonus to certain European employees of the company, \$8000; to carry forward to current year, \$61,835.55. Total, \$121,685.55.

SIAM'S FOREIGN LOAN.—The loan which is now being negotiated successfully in London will be 1,000,000 £. only, instead of 2,000,000 £. as was first proposed. The interest will be 5 per cent, and the duration of the loan 30 years. All the money will be devoted to railway construction. Hitherto, the Siamese Government has paid for its railways out of revenue, during the last few years having spent nearly 2,000,000 £. on construction, but the slowness of railway building out of surplus revenue has prompted the progressive Siamese to follow the more useful method of raising money. It is said the loan is proving a very popular financial investment.

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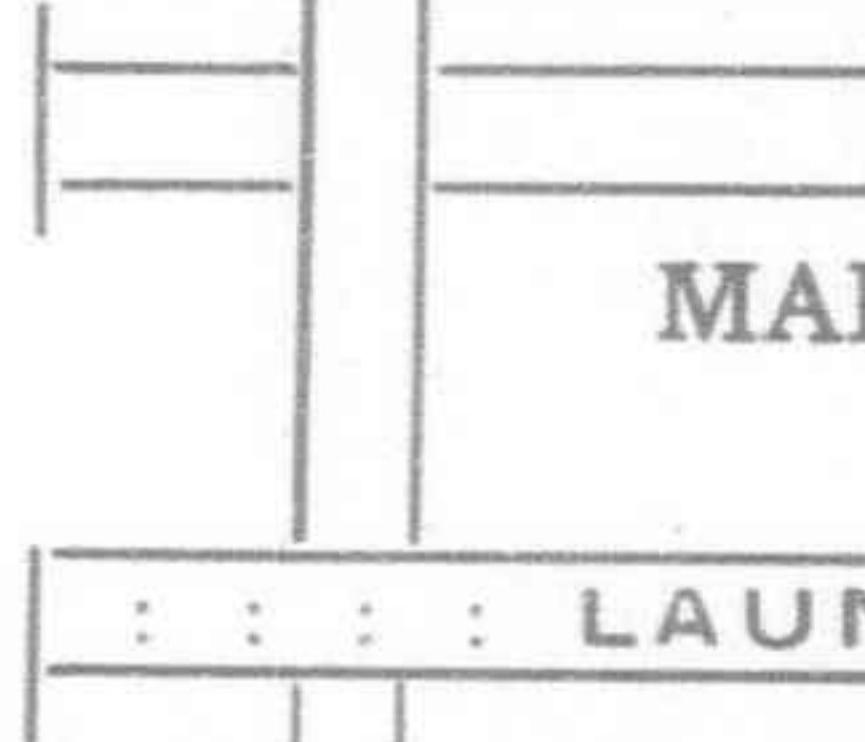
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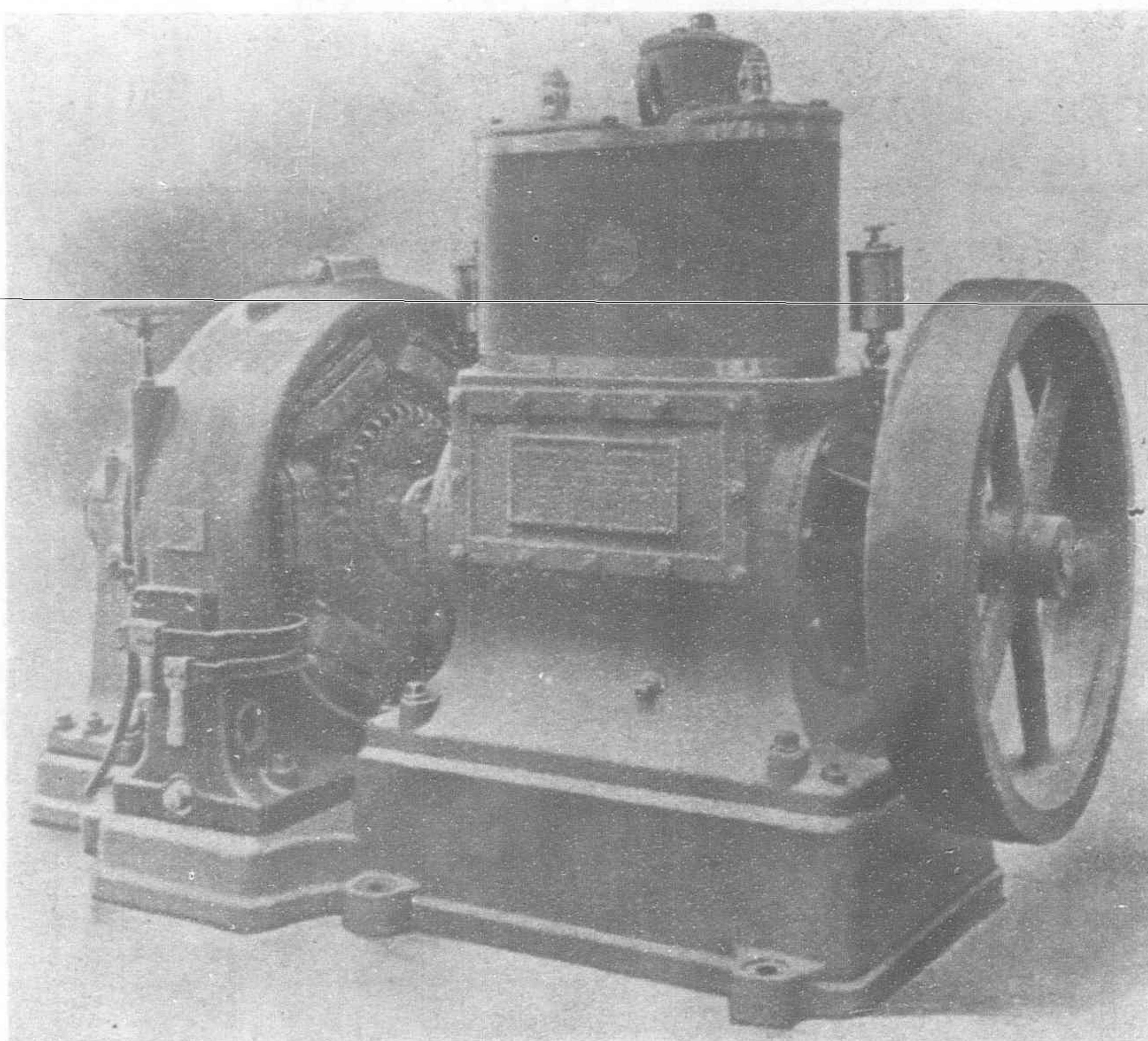
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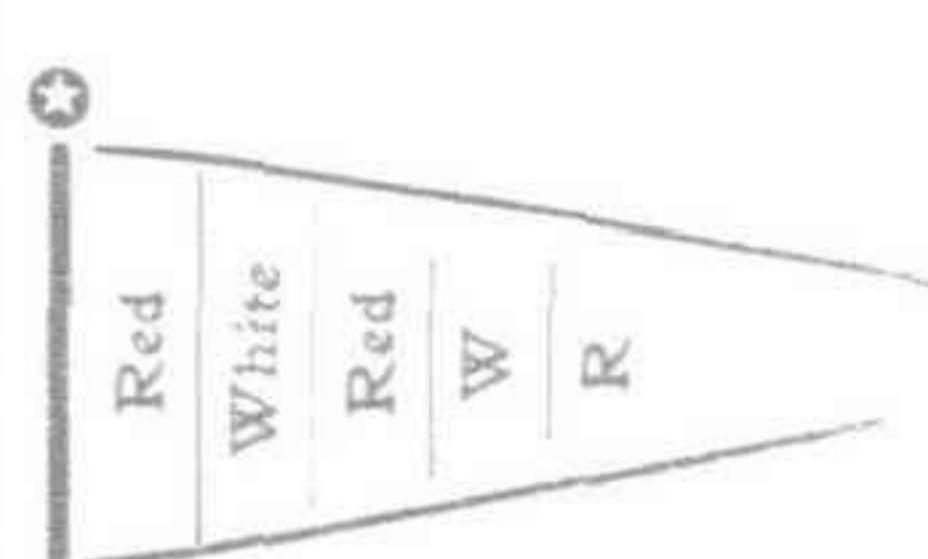
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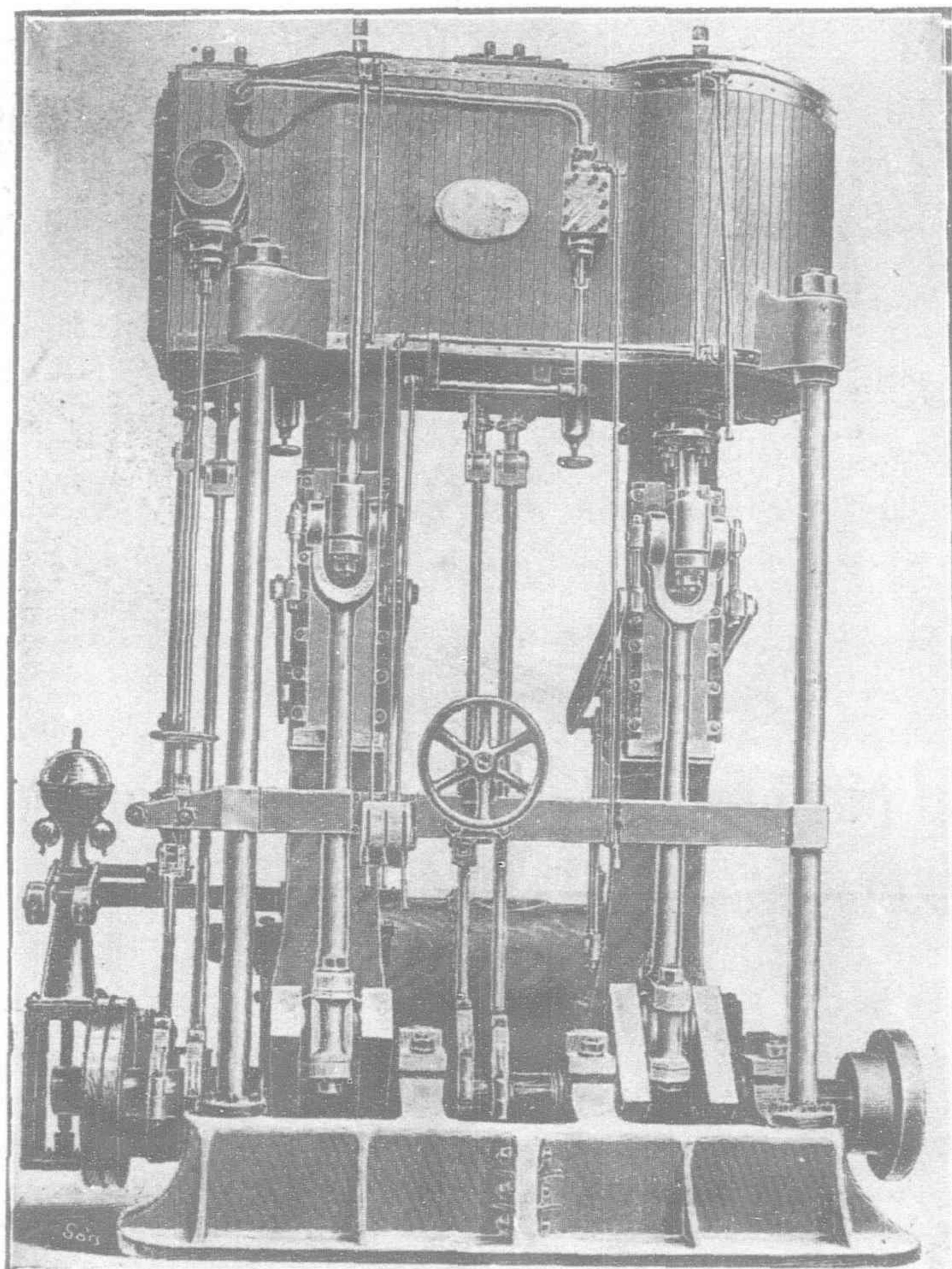


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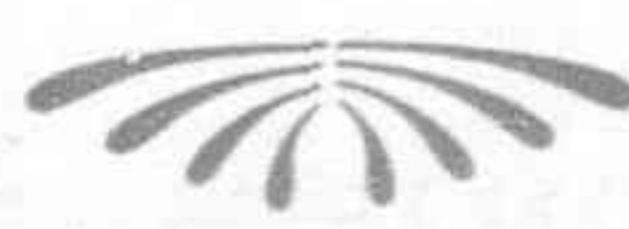
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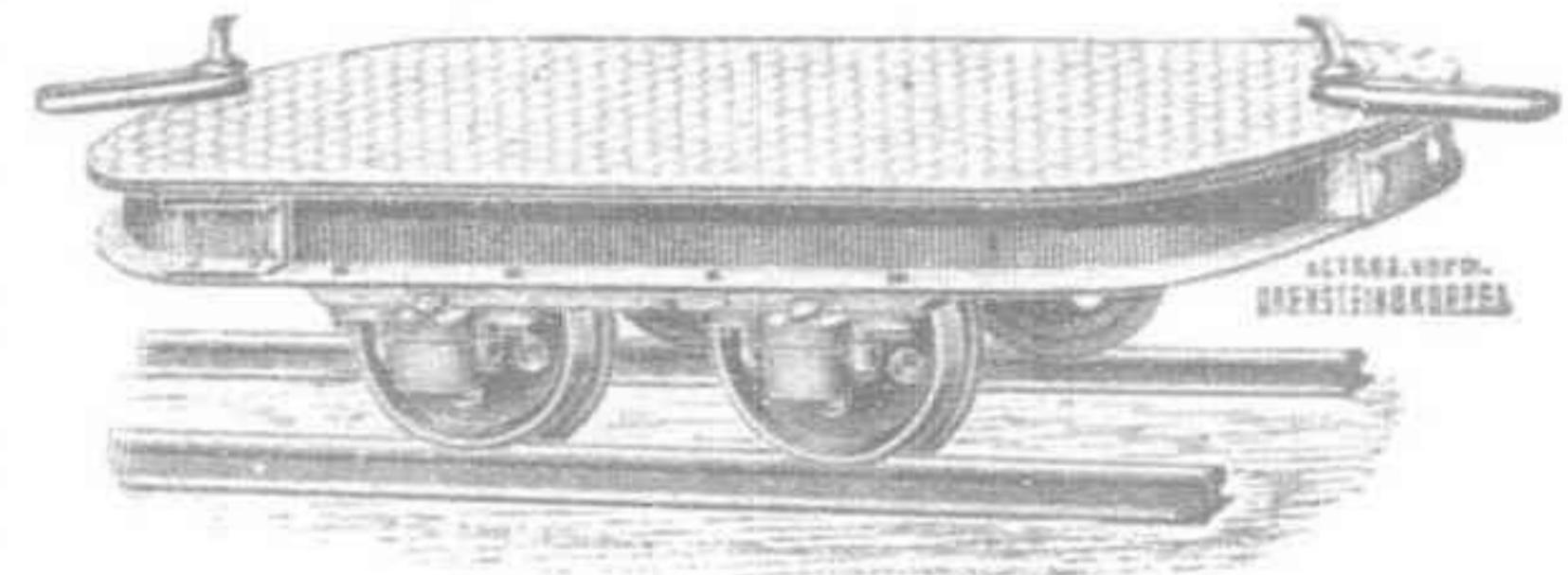
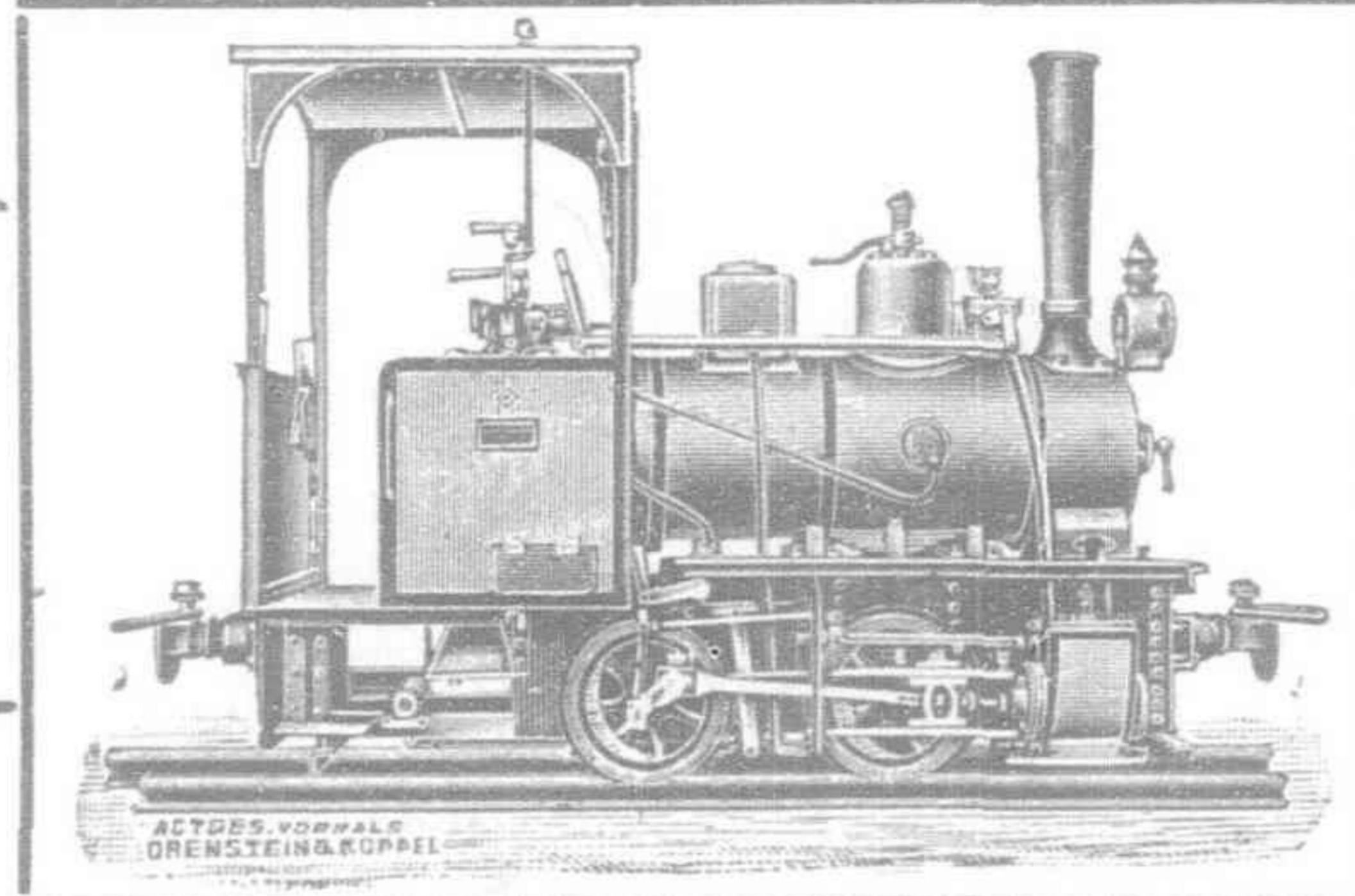
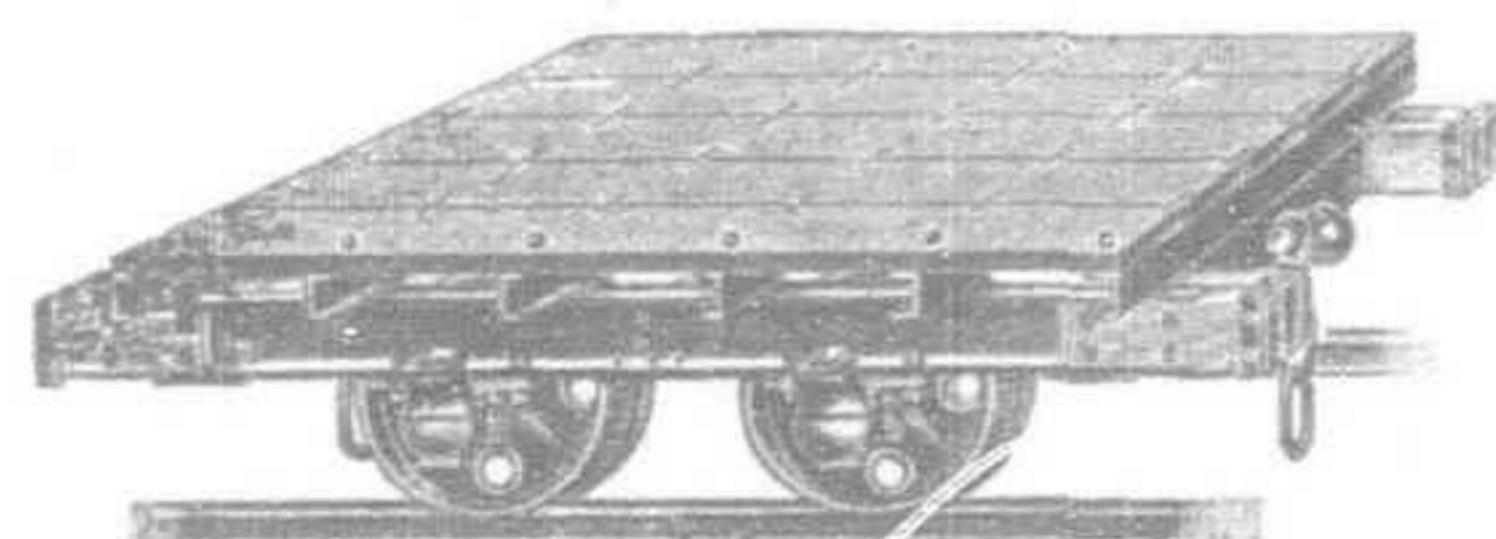
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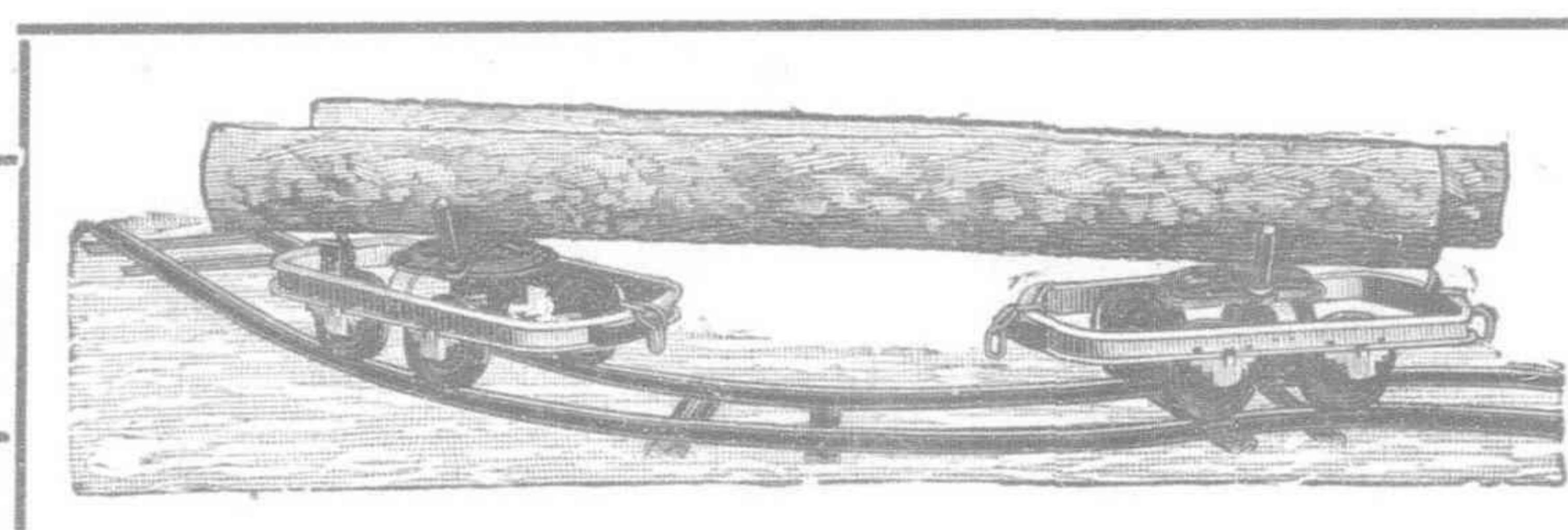
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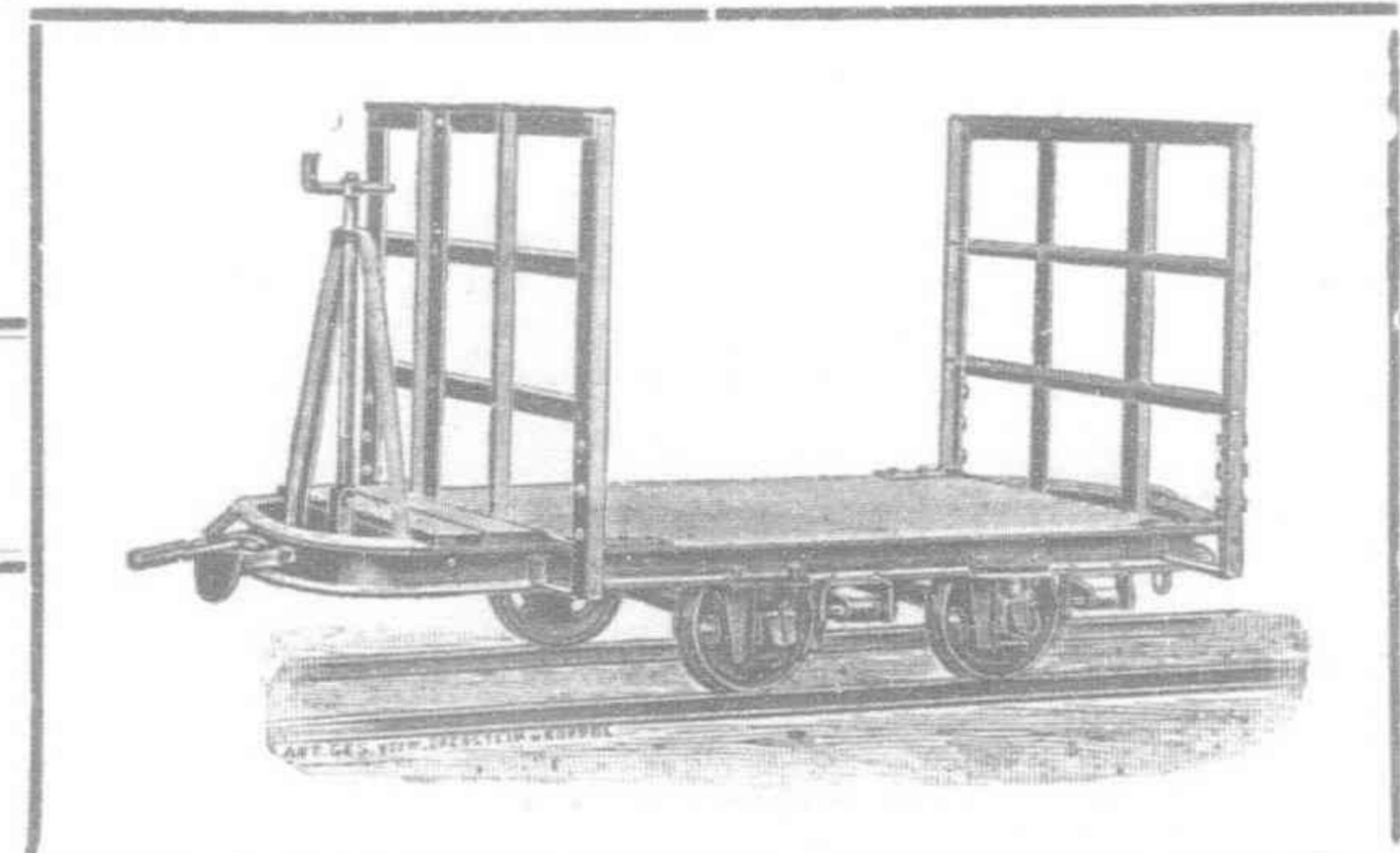
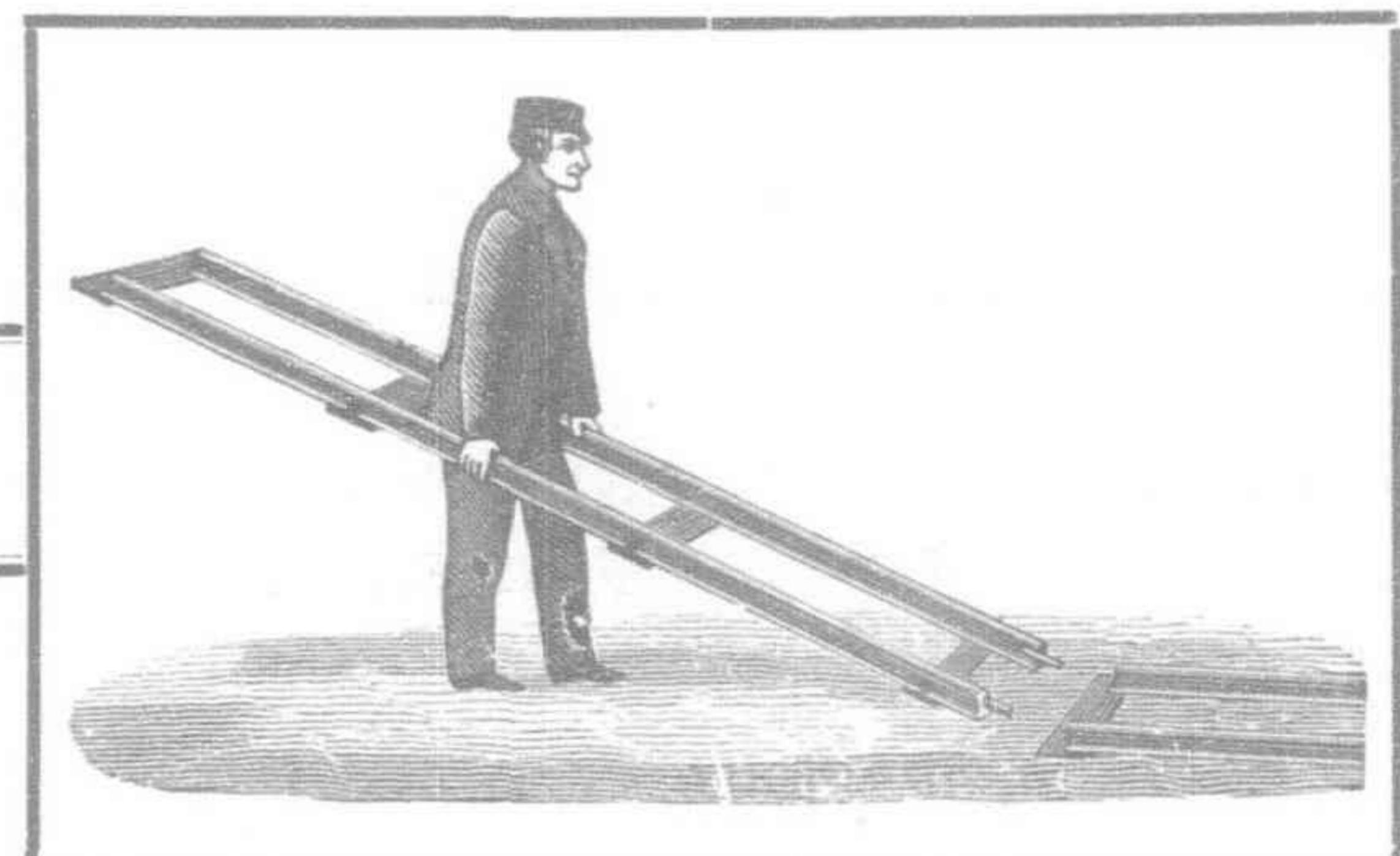
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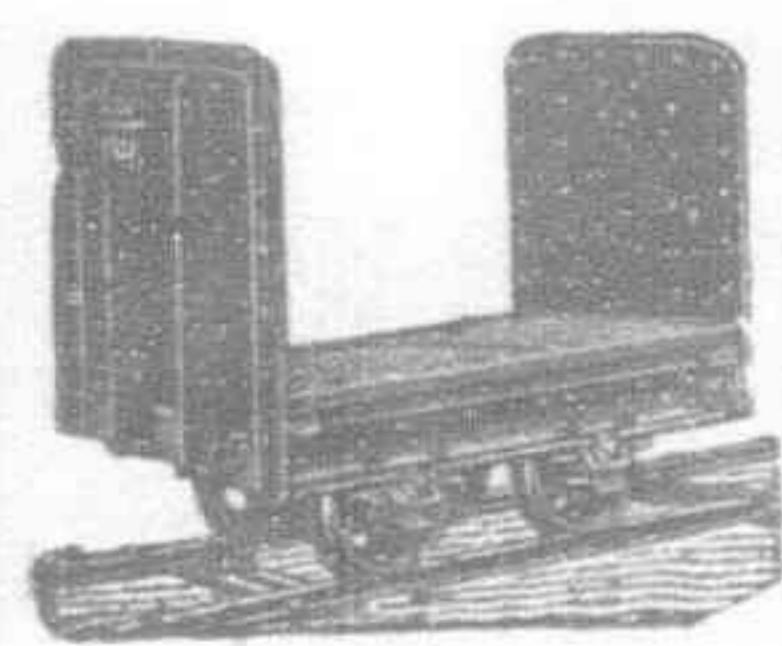
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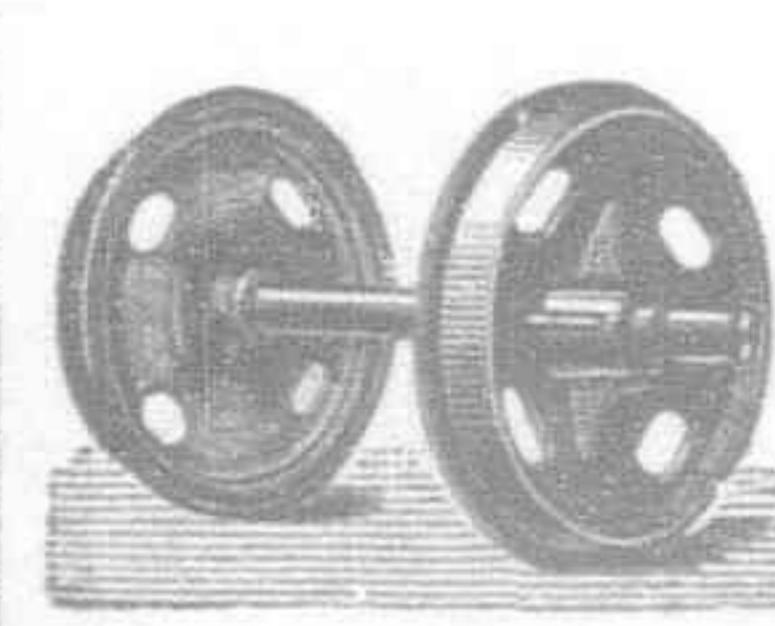


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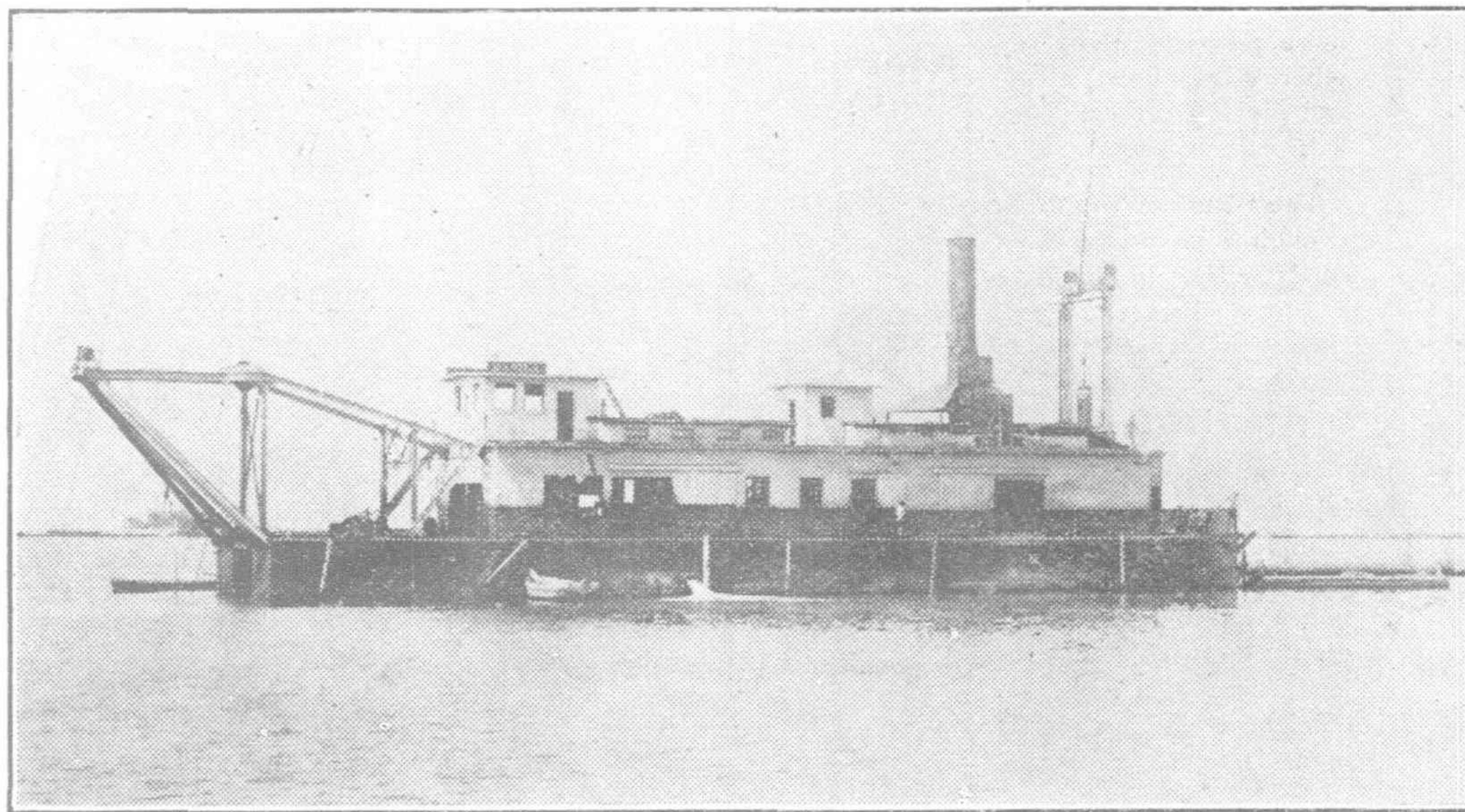
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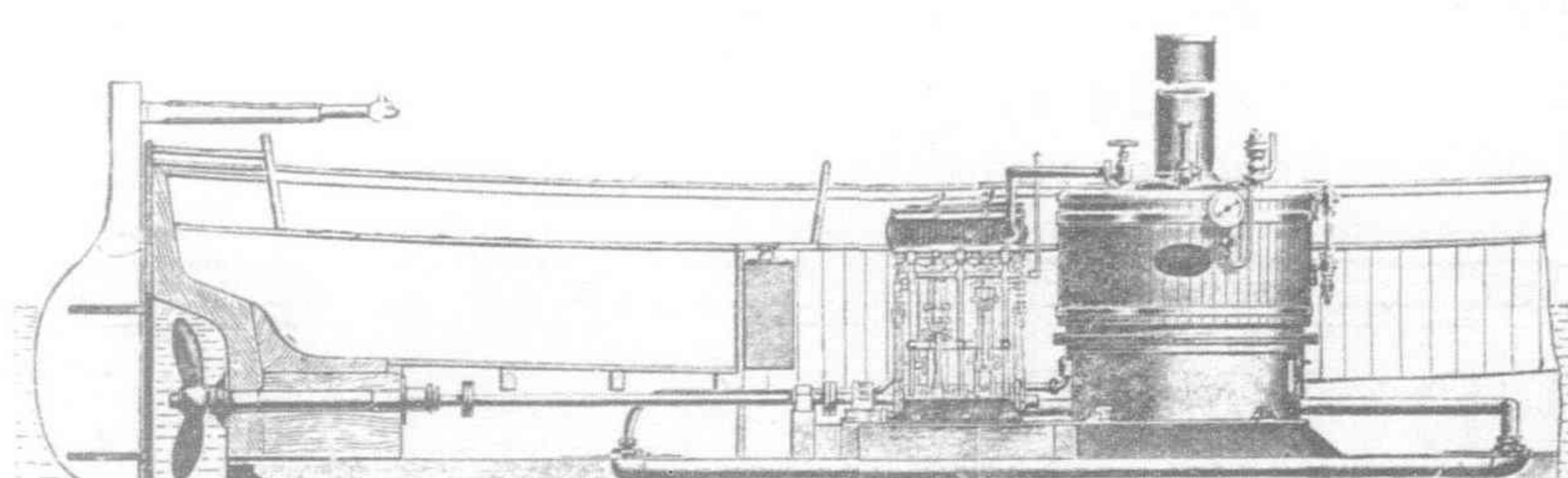
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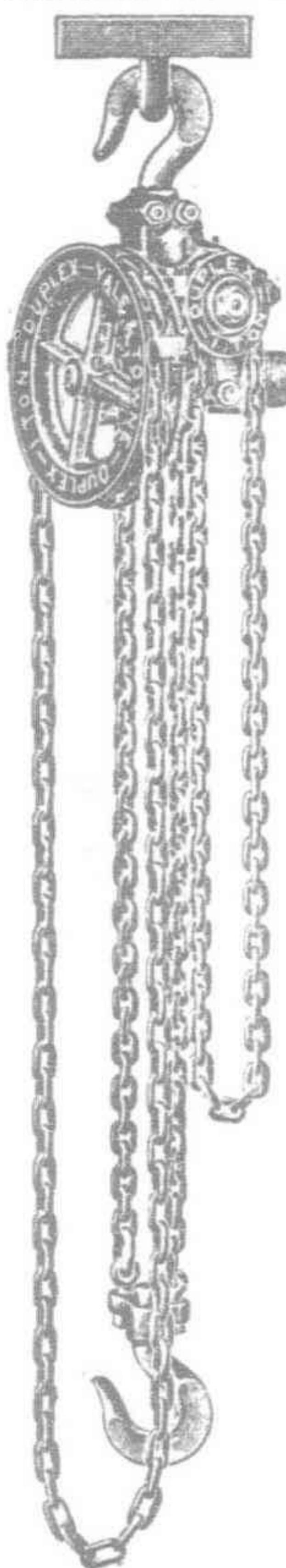
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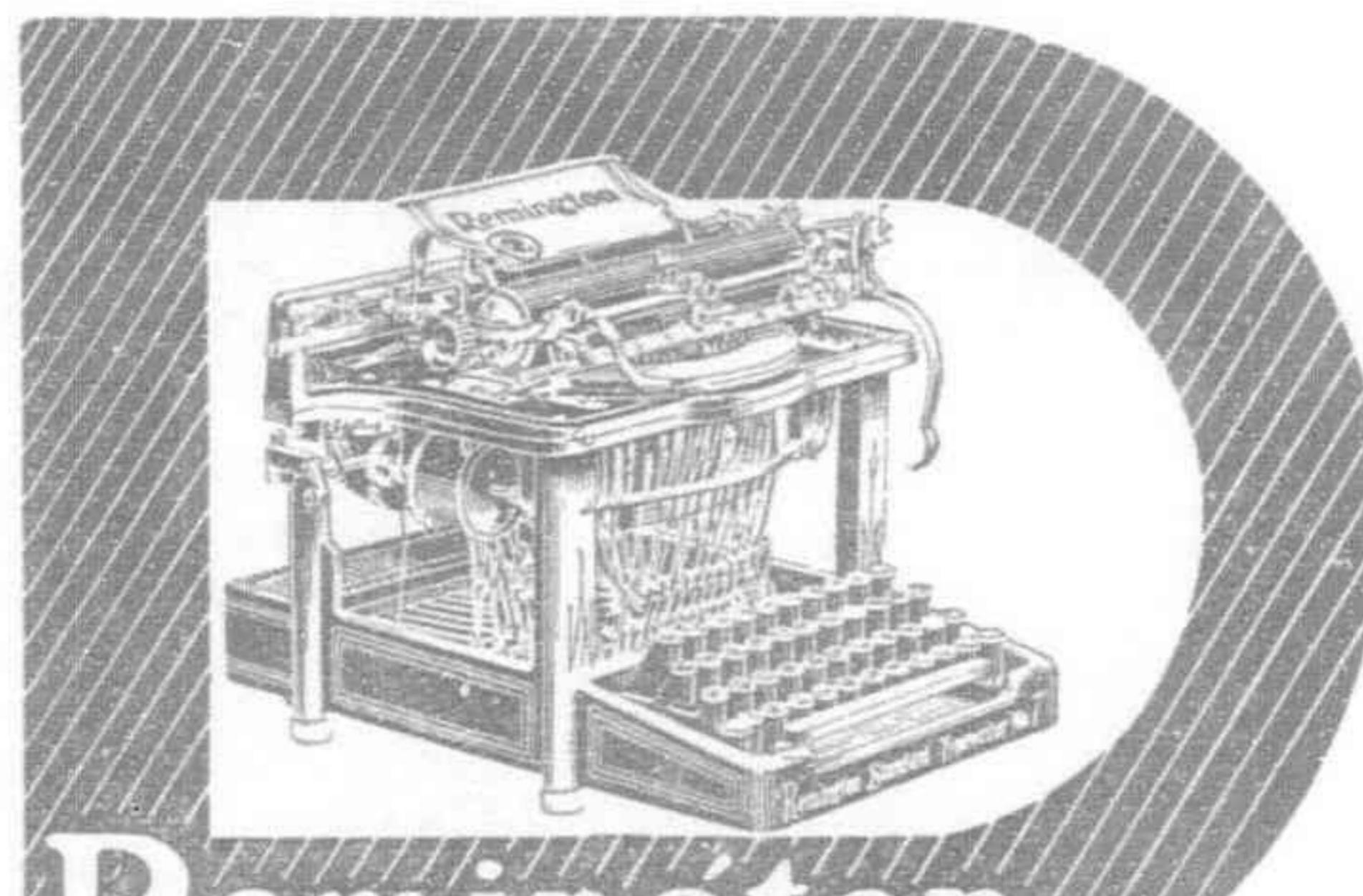


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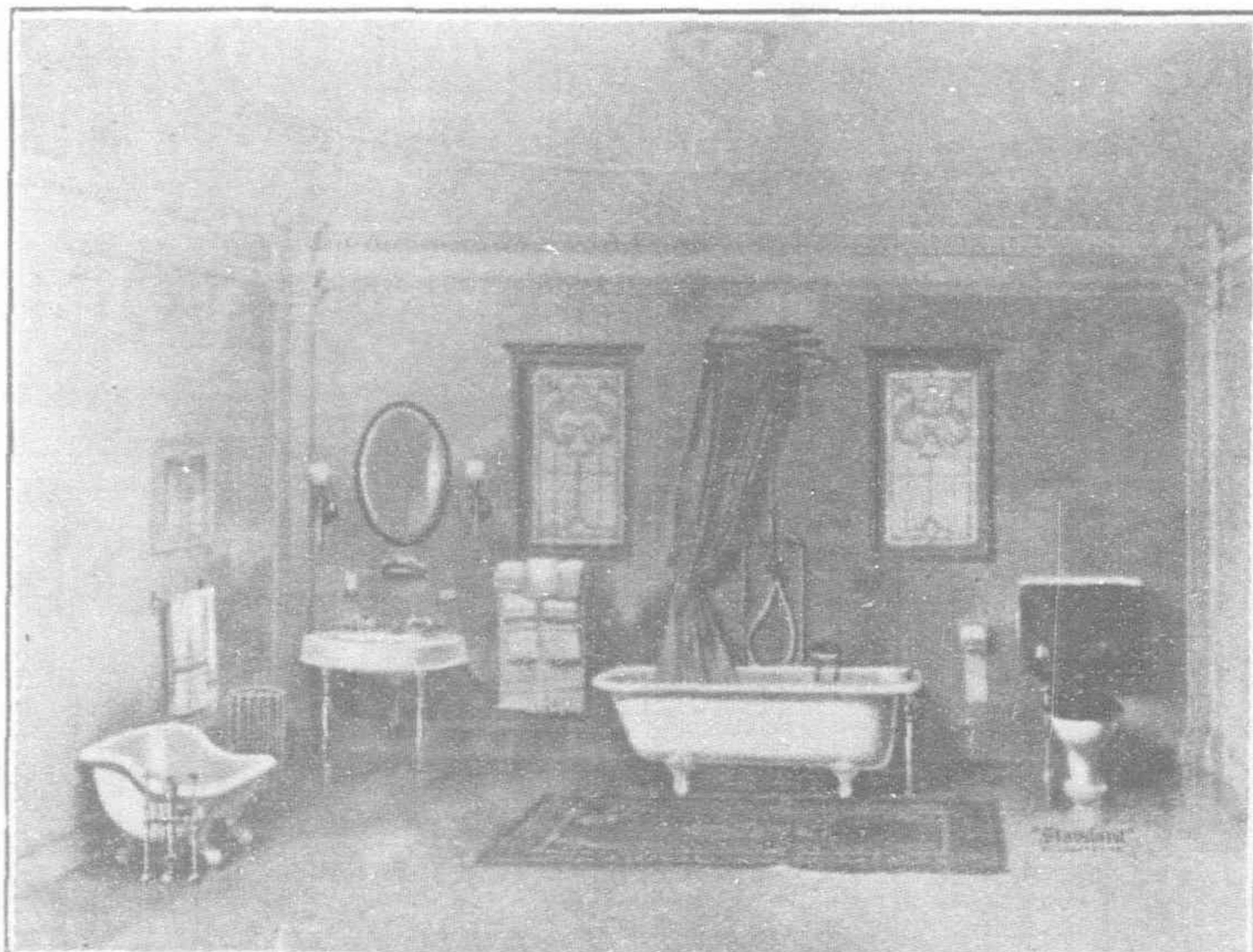
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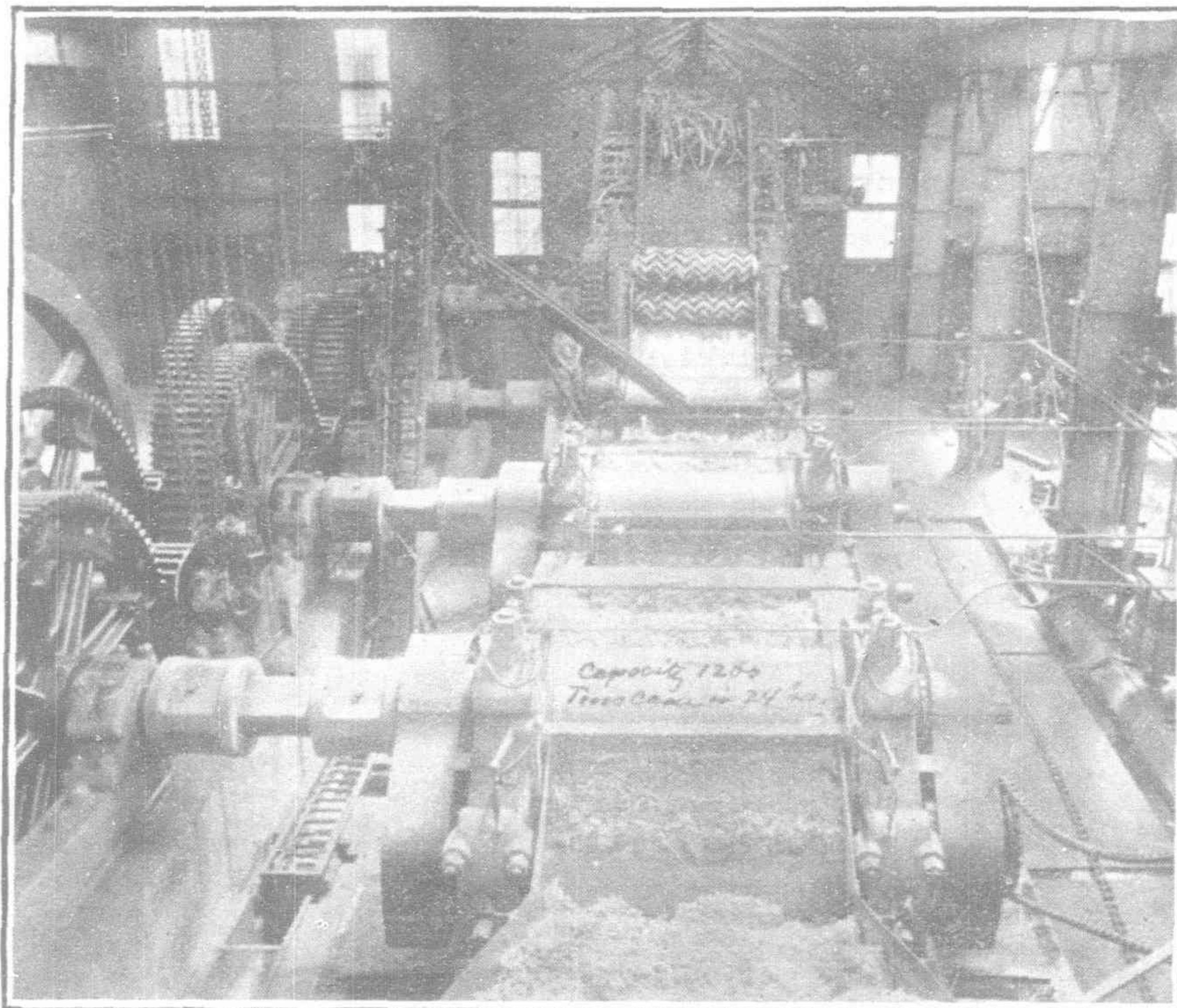
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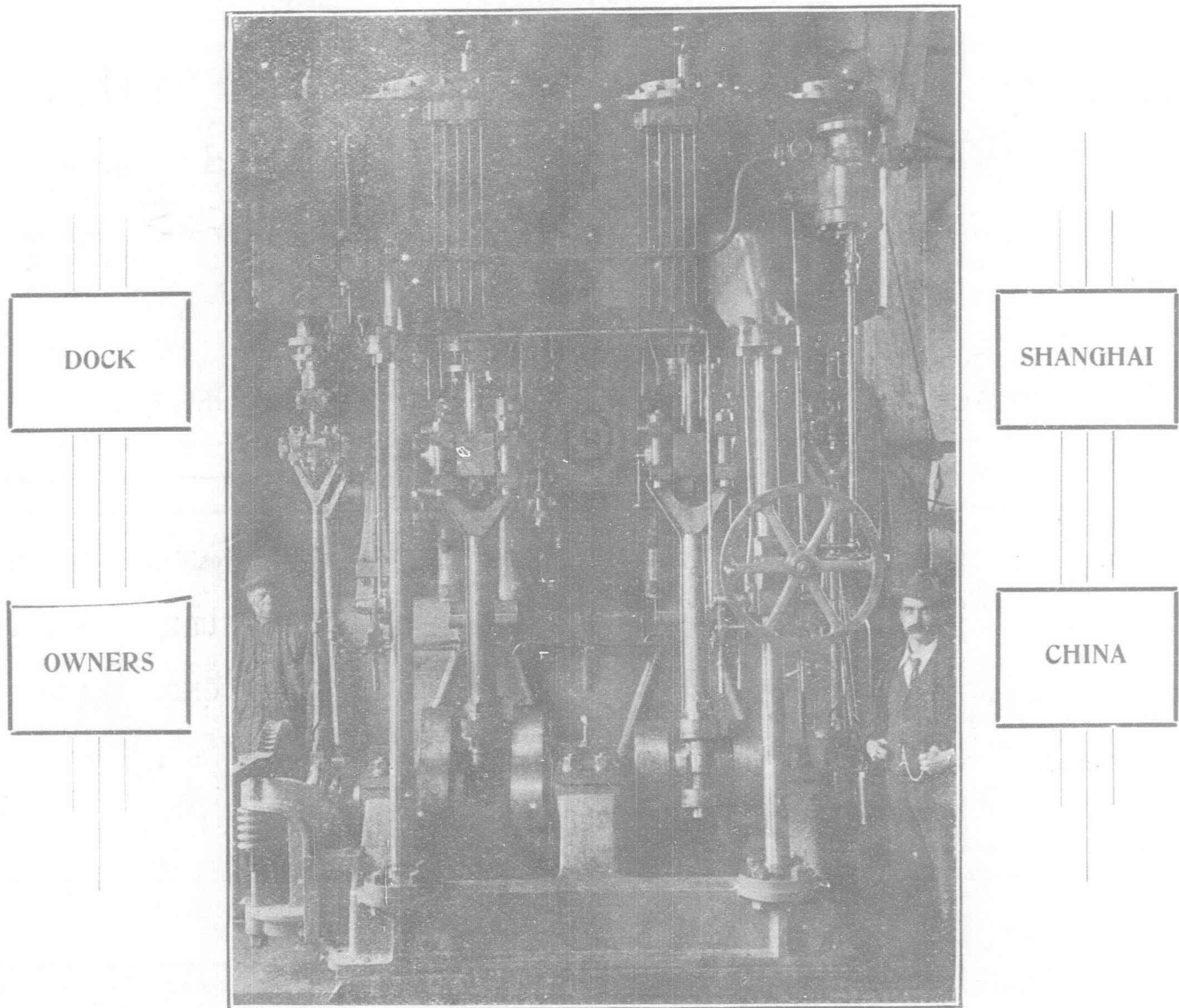
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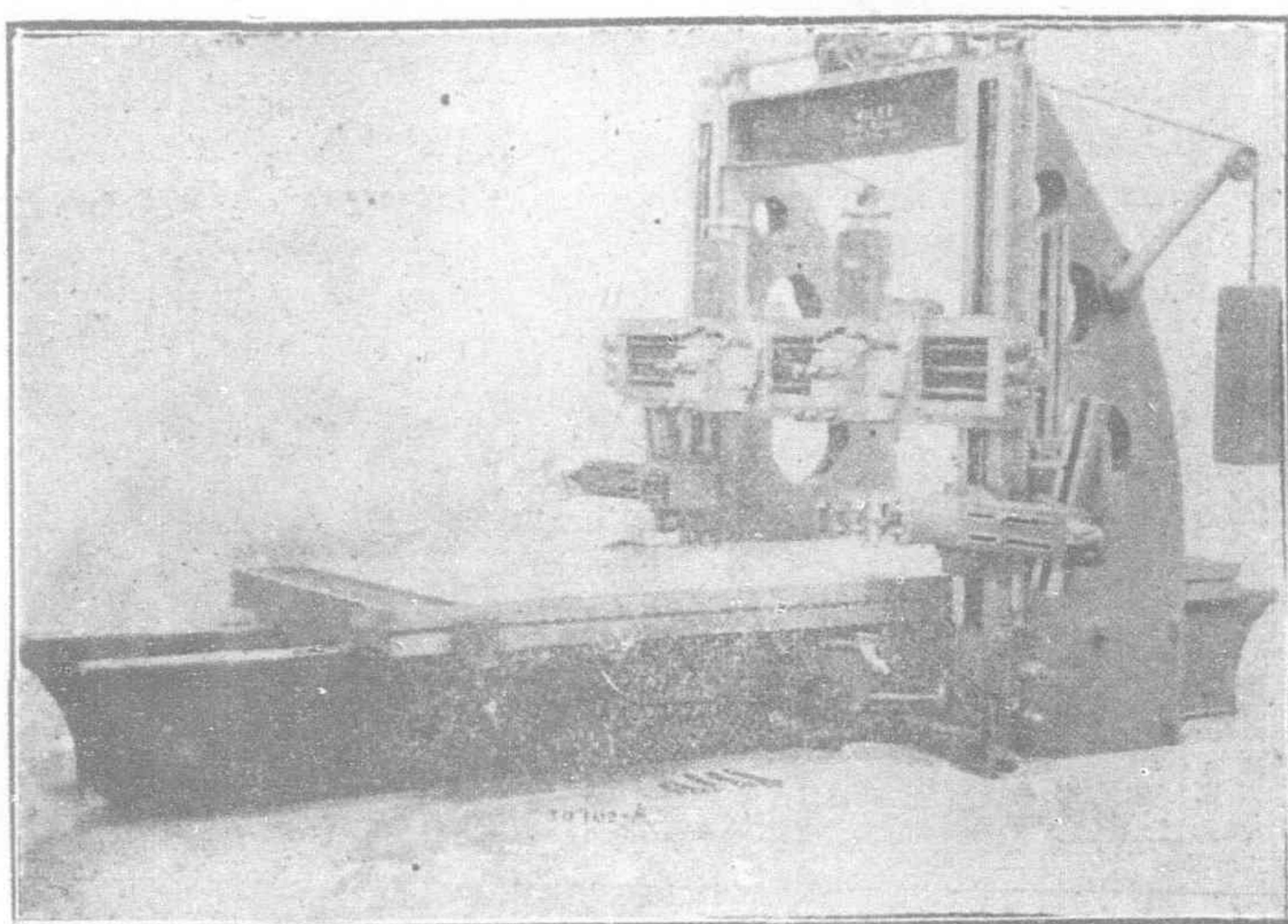
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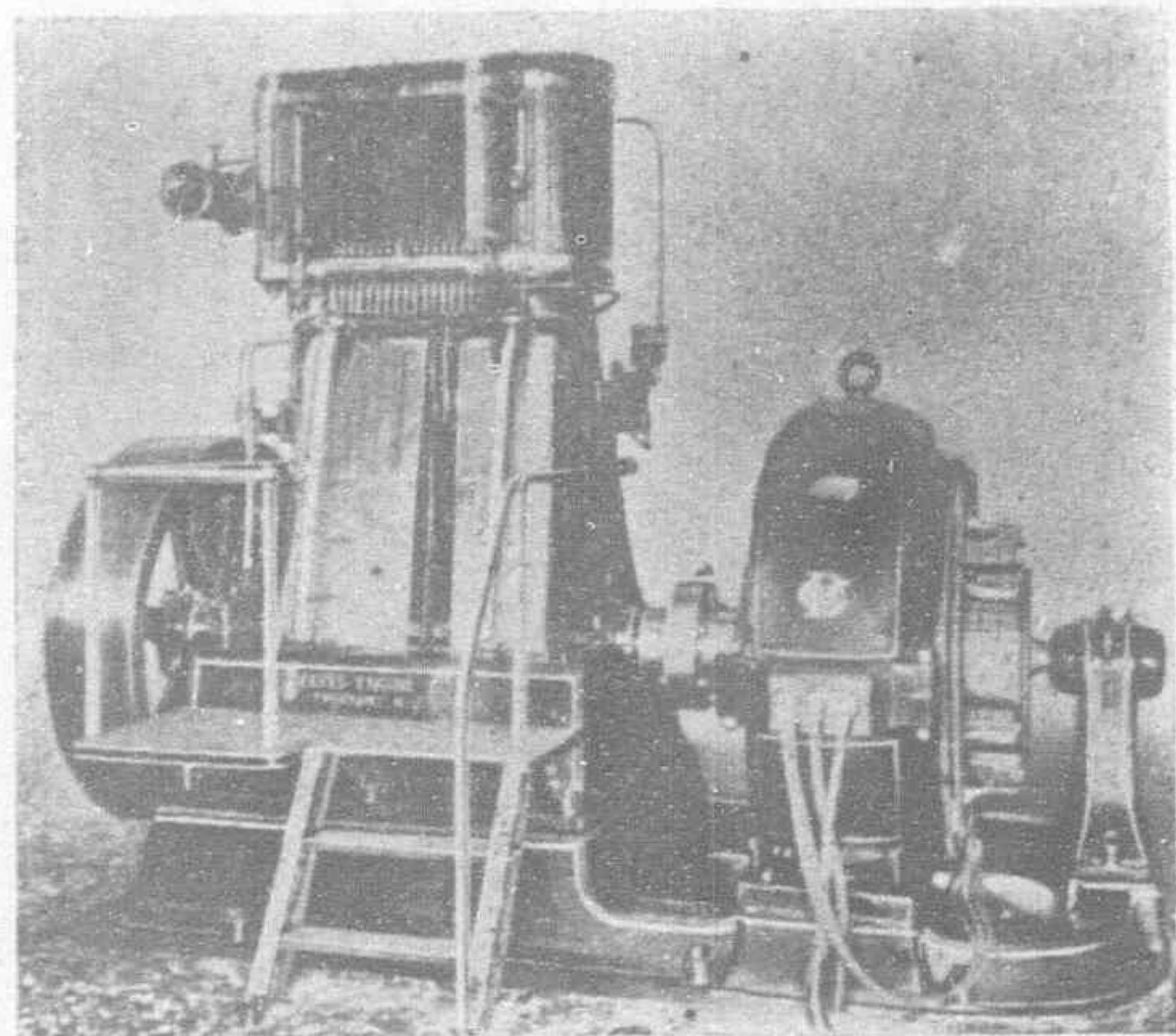
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